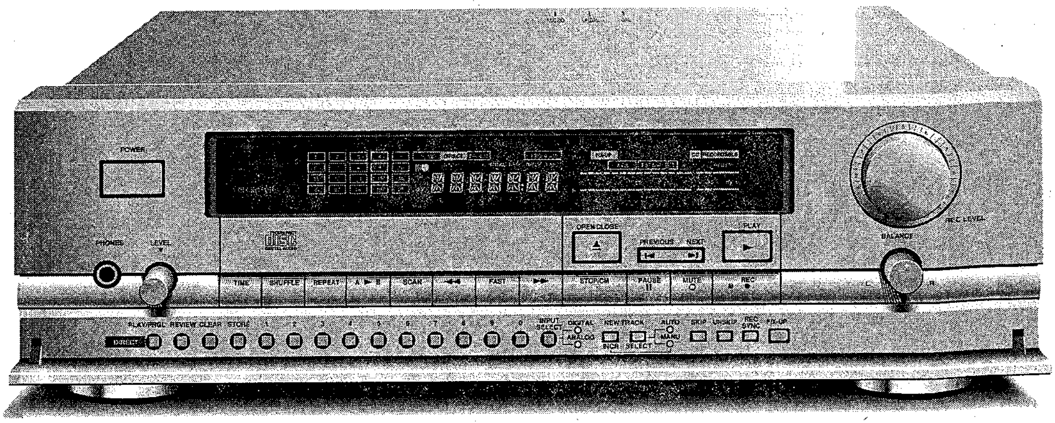
Service Manual

74CDR1/01G

Compact Disc Recorder


POWER
PHONES
LEVEL
TIME
SHUFFLE
REPEAT
SCAN
FAST
STOP/CM
PAUSE
MUTE
REC
OPEN/CLOSE
PREVIOUS
NEXT
PLAY
BALANCE
REC LEVEL

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marantz ®

model CDR1

First issue: 1991
4822 725 24002
MZ 3066

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, MARANTZ company has created the ultimate in stereo sound.
Only **original MARANTZ parts** can insure that your MARANTZ product will continue to perform to the specifications for which it is famous.

Parts for your MARANTZ equipment are generally available to our National Marantz Subsidiary or Agent.

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Vestdijk 9
5600 MD Eindhoven
The Netherlands
Phone: +31/40.758290
Telefax: +31/40.75.82.99
Telex: 35000 PHTC NL routing IND NLMTFAT

ORDERING PARTS:

Parts can be ordered either by mail or by telex. In both cases, correct part number has to be specified.
The following information must be supplied to eliminate delays in processing your order:

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature: any order form or telex must be signed otherwise such part order will be considered as null and void.

PARTS ORDERING

Parts may be ordered at the following addresses:

AUSTRIA
MARANTZ
Hietzinger Kai 137a
1130 Wien

BELGIUM
SVD DIVISION MARANTZ
Industrialaan 1
1720 Groot-Bijgaarden
Belgium
Telex: 24466

CHILE
MARANTZ
DIVISION OF PHILIPS S.A.
AV. Santa Maria, 0760
Casilla 2687
Santiago
Telex: 240.239

DENMARK
MARANTZ
Horsvinget 5
2630 Tastrup

NORWAY
MARANTZ
Postboks 7034
Assiden
3007 Drammen

FRANCE
MARANTZ FRANCE
4 Rue Bernard Palissy
92600 Asnières
France
Telex: 611651

GERMANY
MARANTZ GERMANY GmbH
Alexanderstrasse 1
2000 Hamburg
Germany

THE NETHERLANDS
Elpro Marantz
Wint Hontlaan 28
3526 KV Utrecht
The Netherlands
Telex: 4748

SWEDEN
MARANTZ
Box 1324
171 25 Solna

FINLAND
MARANTZ
Kuortanegatan 1
00520 Helsingfors 52

GREAT BRITAIN
MARANTZ HiFi U.K. Ltd
Kingsbridge House
Padbury oaks
575-583 Bath Road
Long ford
Middlesex UB7 OEH
Faxnr.: 0753 680 428

GREECE
SHERTON ELECTRONICS S.A.
P.O.Box 21025
Hippocratus Street 188
Athens 11471
Greece
Telex: 216.795

JAPAN
MARANTZ JAPAN, Inc.
35-1, 7-chome, Sagamiono
Sagamihara-shi, Kanagawa
Japan

KUWAIT
AL ALAMIAH ELECTRONICS
Ussama Building
Fahd al Saleem Street
P.O.Box 23781
Safat-Kuwait
Telex: 22694

ITALY
MARANTZ ITALIANA S.P.A.
Via Chiese, 74
20126 Milano
Italy

SAUDI ARABIA
AL ALAMIAH ELECTRONICS
P.O.Box 5954
University Street
Riyadh 11432
Saudi Arabia
Telex: 401530

SOUTH AFRICA
MARANTZ
DIVISION OF PHILIPS S.A.
Main Road Martindale
P.O. Box. 58088
Newville 21114
South Africa

SPAIN
Euroservice S.A.
Bernardo obrëgón, 26
28012 Madrid
faxnr.: 3412 306 198

SWITZERLAND
MARANTZ
Technischer Service
Duenstrasse 3
3186 Düdingen
Switzerland

TURKEY
DOGRUOL Ltd.
I.M.C.
6 Blok N°6310
Unkapani
Istanbul
Turkey
Telex: 22085

MALTA
CACHIA & GALEA
Republic Street, 68D
Valetta
Telex: 1682

PORTUGAL
MARANTZ
Divisao philips S.A. service
Outurela-carnaxide
2795 LinDA-A-VELHA
Telex: 43906

All of the above locations are fully equipped to take care of your total service needs. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In he event that there is no service location listed for your country, please, contact the nearest facility for the necessary assistance.

In case of difficulties, do not hesitate to contact the Technical Department at abovementioned address.

ESD

GB WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD).
Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance.
Keep components and tools also at this potential.

F ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

D WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegen elektrostatische Entladungen (ESD).
Unsorgfältige Behandlung bei der Reparatur kann die Lebensdauer drastisch vermindern.
Sorgen sie dafür, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind.
halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

NL WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.
Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

I AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

GB

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

NL

Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde worden toegepast.

S Varo!

Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Alä katso säteeseen.

D

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden für Reparaturen sind Original-Ersatzteile zu verwenden.

I

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati pezzi di ricambiago identici a quelli specificati.

SF Varning!

Osynlig laserstrålning när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen.

F

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agrées, seuls habilités à réparer votre appareil en panne".

TECHNICAL SPECIFICATIONS

General

1.	Mains voltage /01G	: 110V-127V-220V (±10%)
2.	Mains frequency	: 50 Hz
3.	Power consumption mains, operating	: 40 W
4.	Inclination	: max. 10°

Dimensions and weight

1.	Apparatus tray closed	: WxDxH 420 x 330 x 121/141 mm
2.	Apparatus tray open	: WxDxH 420 x 475 x 121/141 mm
3.	Weight	: 9,9 kg

Optical read-out system

1.	Laser type	: Semiconductor
2.	Wavelength	: 780 nm ±15 nm
3.	Light output (Total amount out of objective)	:
	During playing	: max. 0,9 mW min. 0,7 mW
	During recording	: 14 mW (Peak) 11 mW (Writing level)

PLAYBACK

Unbalanced output

1.	Output voltage	: 2 Vrms ±1,5dB
2.	Unbalance	: max. 0,85dB
3.	Output impedance	: 200Ω
4.	Amplitude linearity	: max. ±0,05dB from 20Hz to 20kHz
5.	Phase linearity	: max. 0,6° from 20Hz to 20kHz
6.	Signal to noise ratio	: min. 95dB (A-wtg)
7.	Dynamic range	: min. 88dB from 20Hz to 20kHz
8.	Total harmonic distortion + noise	: min. 84dB from 20Hz to 20kHz
9.	Outband attenuation	: min. 60dB above 25kHz
10.	Channel separation	: min. 88dB from 20Hz to 20kHz
11.	Muting during random access	: min. 90dB

Balanced Output (XLR output)

1.	Output voltage	: 3 Vrms ±0,1dB
2.	Unbalance	: max. 0,2dB
3.	Output impedance	: 100Ω
4.	Amplitude linearity	: max. ±0,5dB from 20Hz to 20kHz
5.	Signal to noise ratio	: min. 92dB (A-wtg)
6.	Dynamic range	: min. 85dB from 20Hz to 20kHz
7.	Total harmonic distortion + noise	: min. 80dB from 20Hz to 20kHz
8.	Outband attenuation	: min. 60dB above 25kHz
9.	Channel separation	: min. 85dB from 20Hz to 20kHz
10.	Muting during random access	: min. 86dB

HEADPHONE

1.	Output voltage	: 0 to 6,5 Vrms ±2dB
2.	Unbalance	: max. 2dB
3.	Output impedance	: 120Ω
4.	Load impedance range	: 8 - 32 - 200 - 600 - 1000 - 2000Ω
5.	Output power	: 0 - 58 mW into 32Ω (max. 95 mW) 0 - 49 mW into 600Ω (max. 78 mW) 0 - 88 mW into 120Ω (max. 140 mW)
5.	Signal to noise ratio	: min. 87dB Load 600Ω
6.	Dynamic range	: min. 86dB from 20Hz to 20kHz Load 600Ω
7.	Total harmonic distortion + noise	: min. 80dB from 20Hz to 20kHz Load 600Ω
8.	Channel separation	: min. 65dB from 20Hz to 20kHz Load 600Ω
9.	Phase linearity	: max. ±0,35° from 20Hz to 20kHz

RECORD AND PLAYBACK

Unbalanced input - Unbalanced output

1. Input sensitivity : 0,7 Vrms for max. level (0dB on disc)
   0,11 Vrms for ref. level (-16dB on disc)
2. Unbalance : max. 1,5dB
3. Input impedance : 100kΩ
4. Amplitude linearity : max. ±0,06dB from 20Hz to 20kHz
5. Phase linearity : max. ±3,85° from 20Hz to 20kHz
6. Dynamic range : min. 90dB (A-wtg)
7. Dynamic range : min. 84dB from 20Hz to 20kHz
8. Total harmonic distortion + noise : min. 80dB from 20Hz to 20kHz
9. Outband attenuation : min. 60dB above 25kHz
10. Channel separation : min. 80dB from 20Hz to 20kHz

Balanced input - Balanced output

1. Input sensitivity : 3 Vrms for max. level (0dB on disc)
   0,475 Vrms for ref. level (-16dB on disc)
2. Unbalance : max. 08,5dB
3. Input impedance : 47kΩ
4. Amplitude linearity : max. ±0,06dB from 20Hz to 20kHz
5. Signal to noise ratio : min. 85dB (A-wtg)
6. Dynamic range : min. 84dB from 20Hz to 20kHz
7. Total harmonic distortion + noise : min. 78dB from 20Hz to 20kHz
8. Outband attenuation : min. 60dB above 25kHz
9. Channel separation : min. 75dB from 20Hz to 20kHz

RECORDING

Unbalanced input

1. Input sensitivity : 0,7 Vrms for max. level (0dB on disc)
   0,11 Vrms for ref. level (-16dB on disc)
2. Unbalance : max. 0,3dB
3. Amplitude linearity : max. ±0,01dB from 20Hz to 20kHz
4. Phase linearity : max. ±3,25° from 20Hz to 20kHz
5. Signal to noise ratio : min. 94dB (A-wtg)
6. Dynamic range : min. 88dB from 20Hz to 20kHz
7. Total harmonic distortion + noise : min. 84dB from 20Hz to 20kHz
8. Outband attenuation : min. 86dB from 25kHz to 2,8224MHz
9. Channel separation : min. 85dB from 20Hz to 20kHz

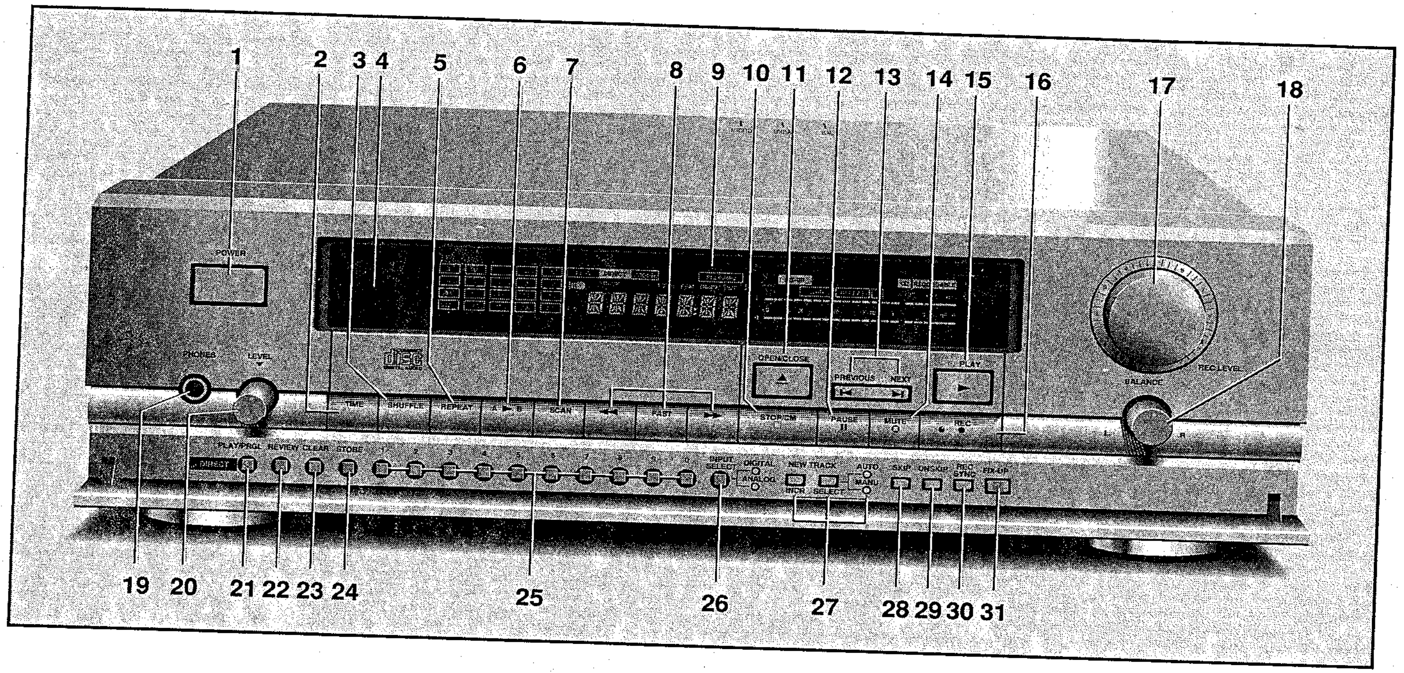
Balanced input (XLR)

1. Input sensitivity : 3 Vrms for max. level (0dB on disc)
   0,475 Vrms for ref. level (-16dB on disc)
2. Unbalance : max. 0,65dB
3. Amplitude linearity : max. ±0,02dB from 20Hz to 20kHz
4. Phase linearity : max. ±4,9° from 20Hz to 20kHz
5. Signal to noise ratio : min. 90dB (A-wtg)
6. Dynamic range : min. 85dB from 20Hz to 20kHz
7. Total harmonic distortion + noise : min. 84dB from 20Hz to 20kHz
8. Outband attenuation : min. 86dB from 25kHz to 2,8224MHz
9. Channel separation : min. 80dB from 20Hz to 20kHz

Microphone

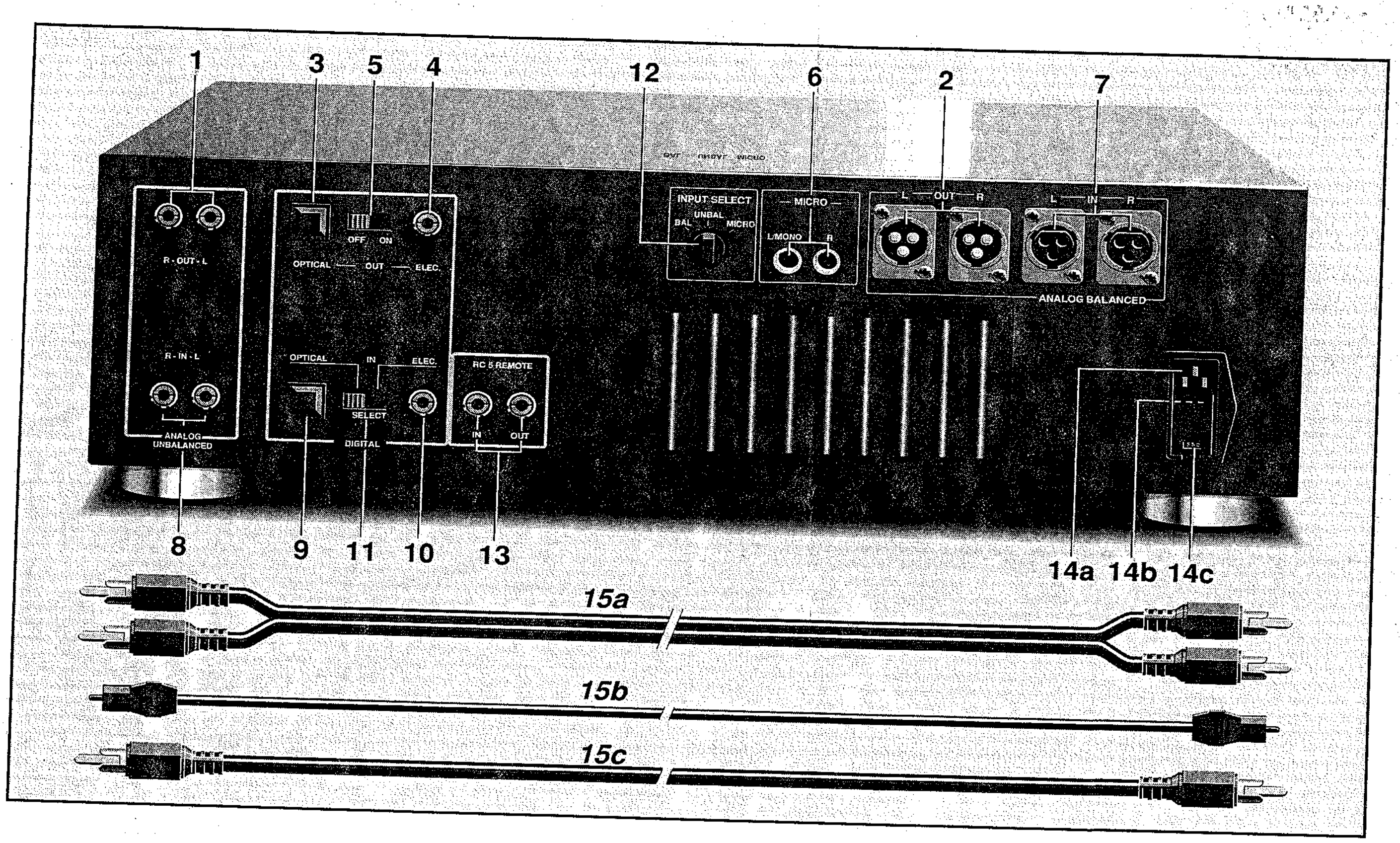
1. Input sensitivity : 20 mV for max. level (0dB on disc)
   3 mV for ref. level (-16dB on disc)
2. Input impedance : 10kΩ
3. Microphone impedance range : 200 - 600 - 2000Ω
4. Amplitude linearity : max. ±1dB from 20Hz to 20kHz
5. Signal to noise ratio : min. 80dB (A-wtg)
6. Total harmonic distortion + noise : min. 65dB from 20Hz to 20kHz
7. Channel separation : min. 60dB from 20Hz to 20kHz

CONTROLS & CONNECTIONS



CONTROLS

Indication on set		Indication in circuit diagram			
1	POWER		1502		
2	TIME		1837		
3	SHUFFLE		1828		
4	IR SENSOR		1802		
5	REPEAT		1819		
6	A ▶ B		1810		
7	SCAN		1844		
8	◀◀ and ▶▶		1834		
		FAST	1843		
			1846		
9	DISPLAY		1805		
10	STOP/CM		1813		
11	OPEN/CLOSE		1812		
12	PAUSE		1822		
13	PREVIOUS and NEXT	PREVIOUS	1821		
		NEXT	1830		
14	MUTE		1831		
15	PLAY		1839		
16	RECORD		1840		
17	RECORDING LEVEL		3550		
18	BALANCE		3551		
19	PHONES		1581		
20	LEVEL		3582		
21	DIRECT PLAY/PROGRAM		1838		
22	REVIEW		1829		
23	CLEAR		1820		
24	STORE		1811		
25	1-0 digit keys			0	1815
				1	1827
				2	1836
				3	1818
				4	1845
				5	1817
				6	1826
				7	1835
				8	1816
				9	1825
26	INPUT SELECT		1824		
27	NEW TRACK	INCREMENT	1833		
		SELECT AUTO/MANUAL	1842		
28	SKIP		1814		
29	UNSKIP		1823		
30	REC SYNC		1832		
31	FIX UP		1841		



CONNECTIONS

ANALOG OUTPUTS		
1	ANALOG UNBALANCED OUT	1160
2	ANALOG BALANCED OUT	L1351 R1352
DIGITAL OUTPUTS		
3	DIGITAL OUT OPTICAL	1170
4	DIGITAL OUT ELECTRICAL (COAXIAL)	1161
5	OFF ON	1140
ANALOG INPUTS		
6	MICROPHONES	L1000 R1001
7	ANALOG BALANCED IN	L1201 R1202
8	ANALOG UNBALANCED IN	1301
DIGITAL INPUTS		
9	DIGITAL IN OPTICAL	1420
10	DIGITAL IN ELECTRICAL (COAXIAL)	1422
11	SELECT	1421
GENERAL CONNECTIONS		
12	INPUT SELECT	1110
13	RC5 REMOTE	1423
14	a MAINS SOCKET	
	b MAINS FUSE HOLDER	
	c VOLTAGE SELECTOR	
15	a 4822 321 22832	
	b 4822 321 23302	

IMPORTANT NOTE ABOUT FIX UP

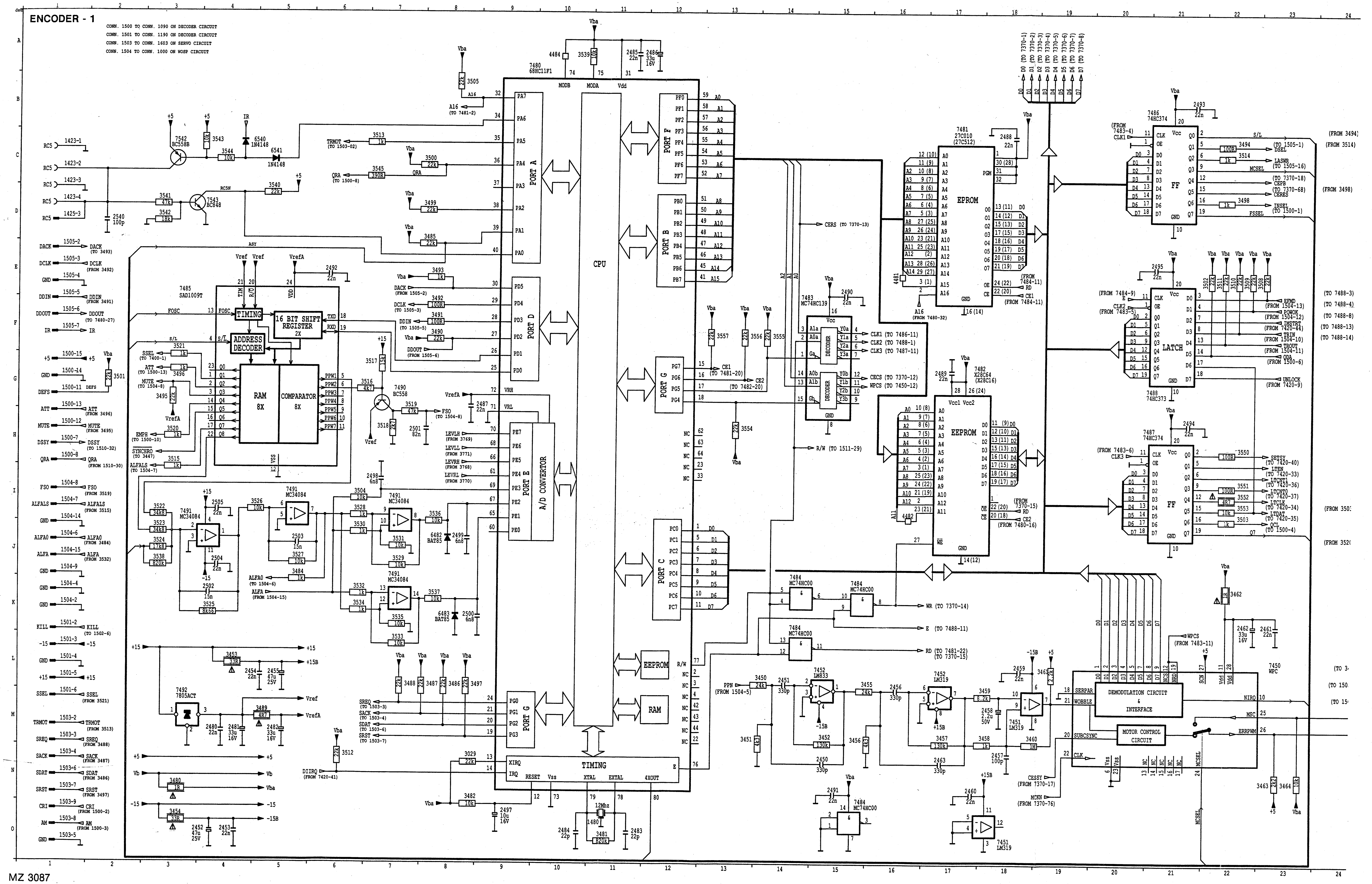
- If you do not yet wish to store the recording permanently, you can remove the CDR and add to the recording at any time or skip unwanted passages and/or tracks.

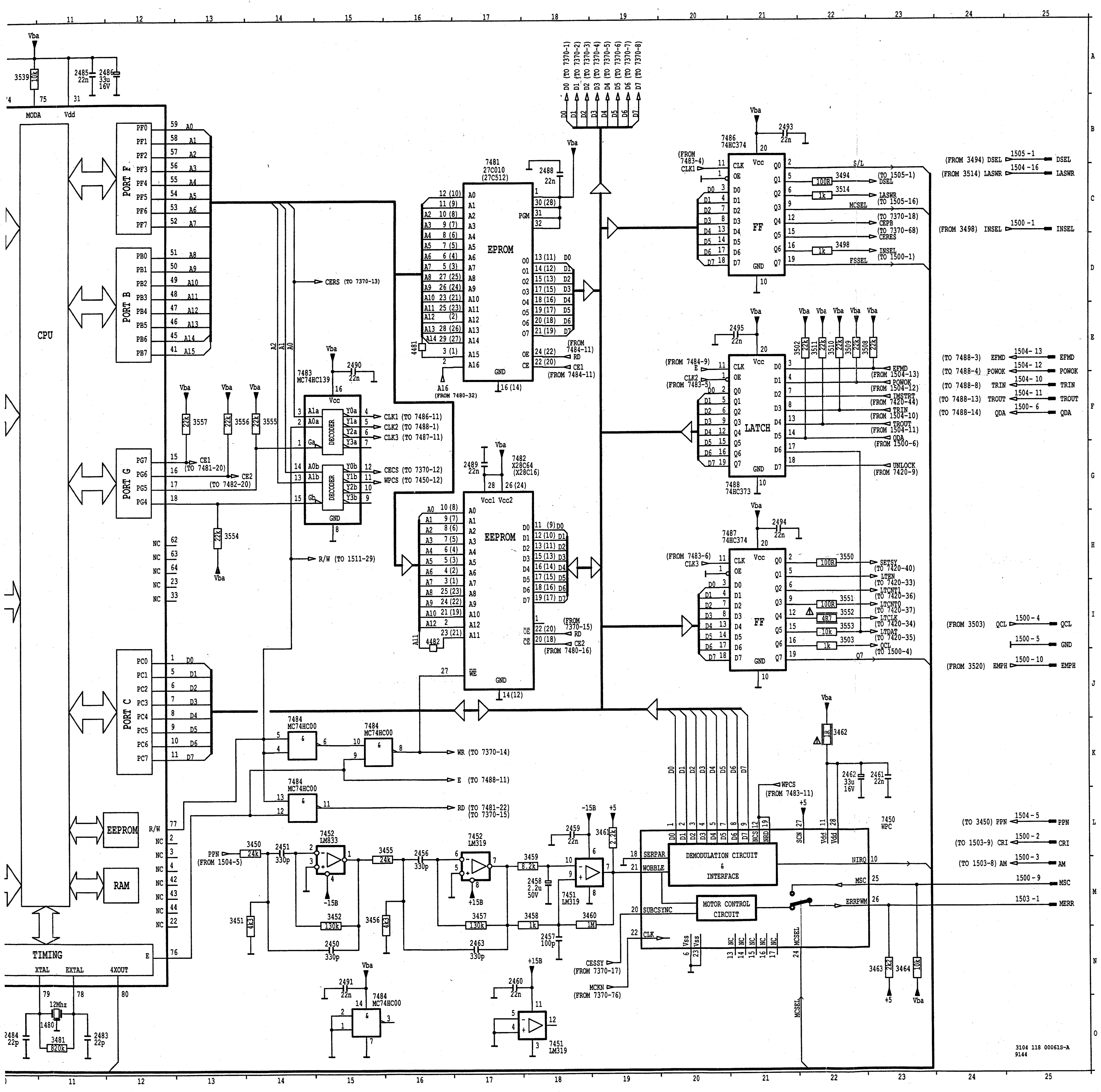
- If you do not wish to store anything else on the CDR, you can store the recording permanently by pressing **FIX UP** and then **within 2 seconds REC**(ord). FIX UP lights up on the display: the recording will now be stored. The storing will take 2 minutes and 58 seconds; this will be counted down on the display. The recording has now been stored on the CDR and can **no longer** be changed.

ENCODER CIRCUIT DIAGRAM

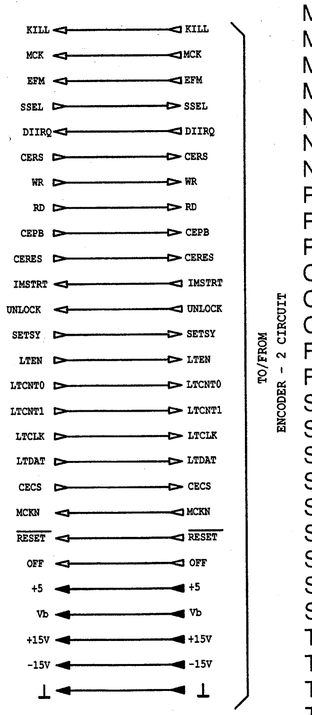
ENCODER - 1

CONN. 1500 TO CONN. 1090 ON DECODER CIRCUIT
CONN. 1501 TO CONN. 1190 ON DECODER CIRCUIT
CONN. 1503 TO CONN. 1603 ON SERVO CIRCUIT
CONN. 1504 TO CONN. 1000 ON WOSP CIRCUIT


7480
68HC11F1
CPU
PORT A
PORT B
PORT C
PORT D
PORT E
PORT F
PORT G
A/D CONVERTOR
EEPROM
RAM
TIMING
7485
SAD1009T
TIMING
16 BIT SHIFT REGISTER 2X
ADDRESS DECODER
RAM 8X
COMPARATOR 8X
7481
27C010
(27C512)
EPROM
7482
X28C64
(X28C16)
EEPROM
7483
MC74HC139
DECODER
7484
MC74HC00
7486
74HC374
FF
7487
74HC374
FF
7488
74HC373
LATCH
7490
BC558
7491
MC34084
7492
7805ACT
7542
BC558B
7543
BC848
6540
1N4148
6541
1N4148
6482
BAT85
6483
BAT85
7451
LM319
7452
LM833
7452
LM319
7450
WPC
DEMODULATION CIRCUIT & INTERFACE
MOTOR CONTROL CIRCUIT
12Mhz
CLK1 (TO 7486-11)
CLK2 (TO 7488-1)
CLK3 (TO 7487-11)
CECS (TO 7370-12)
WPCS (TO 7450-12)
CERS (TO 7370-13)
R/W (TO 1511-29)
WR (TO 7370-14)
E (TO 7488-11)
RD (TO 7481-22) (TO 7370-15)
D0 (TO 7370-1)
D1 (TO 7370-2)
D2 (TO 7370-3)
D3 (TO 7370-4)
D4 (TO 7370-5)
D5 (TO 7370-6)
D6 (TO 7370-7)
D7 (TO 7370-8)
DSEL (TO 1505-1)
LASWR (TO 1505-16)
CEFB (TO 7370-18)
CERES (TO 7370-68)
INSEL (TO 1500-1)
SETSY (TO 7420-40)
LTEN (TO 7420-33)
LTCNT1 (TO 7420-36)
LTCNT0 (TO 7420-37)
LTCLK (TO 7420-34)
LTDAT (TO 7420-35)
OCL (TO 1500-4)
UNLOCK (FROM 7420-9)
NIRQ
MSC
ERRPWM
+15
+15B
-15
-15B
Vref
VrefA
Vba
Vb
MZ 3087


CPU
PORT F
PORT B
PORT G
PORT C
EEPROM
RAM
TIMING
XTAL
EXTAL
4XOUT
12Mhz
7481
27C010
(27C512)
EPROM
7482
X28C64
(X28C16)
EEPROM
7483
MC74HC139
DECODER
7484
MC74HC00
7486
74HC374
FF
7488
74HC373
LATCH
7487
74HC374
7452
LM833
7452
LM319
7451
LM319
7450
WPC
DEMODULATION CIRCUIT & INTERFACE
MOTOR CONTROL CIRCUIT
CERS (TO 7370-13)
R/W (TO 1511-29)
WR (TO 7370-14)
E (TO 7488-11)
RD (TO 7481-22) (TO 7370-15)
CLK1 (TO 7486-11)
CLK2 (TO 7488-1)
CLK3 (TO 7487-11)
CECS (TO 7370-12)
WPCS (TO 7450-12)
PPN (FROM 1504-5)
CESSY (FROM 7370-17)
MCKN (FROM 7370-76)
(FROM 3494) DSEL
(FROM 3514) LASWR
(FROM 3498) INSEL
(TO 7488-3) EFMD
(TO 7488-4) POWOK
(TO 7488-8) TRIN
(TO 7488-13) TROUT
(TO 7488-14) QDA
(FROM 3503) QCL
(FROM 3520) EMPH
(TO 3450) PPN
(TO 1503-9) CRI
(TO 1503-8) AM
MSC
MERR
3104 118 00061S-A
9144

1423	D 1	2493	B21	3533	L 7
1423	C 1	2494	H21	3534	K 6
1423	C 1	2495	E21	3535	K 7
1423	C 1	2497	O 9	3536	I 8
1425	D 1	2498	I 7	3537	K 8
1480	O11	2499	J 8	3538	J 3
1500	H 1	2500	K 8	3539	A10
1500	H 1	2501	H 7	3540	D 5
1500	G 1	2502	K 4	3541	D 3
1500	G 1	2503	J 5	3542	D 3
1500	G 1	2504	J 4	3543	C 4
1500	G 1	2505	I 4	3544	C 4
1500	H 1	2540	D 2	3545	C 7
1500	C25	3029	N 8	3550	H22
1500	M25	3450	L14	3551	I22
1500	L25	3451	M13	3552	I22
1500	M25	3452	M15	3553	I22
1500	I25	3453	L 4	3554	H13
1500	J25	3454	O 3	3555	F14
1500	F25	3455	L15	3556	F13
1500	I25	3456	M15	3557	F13
1501	L 1	3457	M17	4481	E16
1501	M 1	3458	M18	4482	I16
1501	K 1	3459	L18	4484	A10
1501	L 1	3460	M18	6482	J 8
1501	L 1	3461	L19	6483	K 8
1503	M 1	3462	K22	6540	C 4
1503	M 1	3463	N23	6541	C 5
1503	N 1	3464	N23	7450	L23
1503	N 1	3480	N 3	7451	O18
1503	N 1	3481	O11	7451	M18
1503	O 1	3482	N 8	7452	L15
1503	O 1	3484	J 5	7452	L17
1503	O 1	3485	D 7	7480	A 9
1503	M25	3486	L 8	7481	B17
1504	I 1	3487	L 8	7482	G17
1504	J 1	3488	L 7	7483	E14
1504	J 1	3489	M 5	7484	J14
1504	J 1	3490	F 8	7484	K14
1504	I 1	3491	F 8	7484	K15
1504	K 1	3492	F 8	7484	N15
1504	K 1	3493	E 8	7485	E 3
1504	I 1	3494	C22	7486	B20
1504	C25	3495	G 3	7487	H20
1504	L25	3496	G 3	7488	G20
1504	E25	3497	L 8	7490	G 7
1504	E25	3498	D22	7491	I 7
1504	F25	3499	D 7	7491	J 7
1504	F25	3500	C 7	7491	I 5
1505	F 1	3501	G 2	7491	I 3
1505	E 1	3502	E22	7492	M 3
1505	E 1	3503	I22	7542	C 3
1505	E 1	3504	I 6	7543	D 4
1505	E 1	3505	B 8		
1505	F 1	3508	E23		
1505	B25	3509	E22		
2450	N15	3510	E22		
2451	L14	3511	E22		
2452	O 3	3512	N 6		
2453	O 4	3513	C 7		
2454	L 5	3514	C22		
2455	L 5	3515	H 3		
2456	L16	3516	G 6		
2457	N18	3517	G 6		
2458	M18	3518	H 7		
2459	L18	3519	G 7		
2460	N17	3520	H 3		
2461	K23	3521	F 3		
2462	K22	3522	I 3		
2463	N17	3523	J 3		
2480	M 4	3524	J 3		
2481	M 4	3525	K 4		
2482	M 5	3526	I 4		
2483	O11	3527	J 5		
2484	O10	3528	I 6		
2485	A11	3529	J 7		
2486	A11	3530	J 6		
2487	G 8	3531	J 7		
2488	C18	3532	K 6		
2489	G17				
2490	E15				
2491	N15				
2492	E 6				


KILL
MCK
EFM
SSEL
DIIRQ
CERS
WR
RD
CEPB
CERES
IMSTRT
UNLOCK
SETSY
LTEN
LTCNT0
LTCNT1
LTCLK
LTDAT
CECS
MCKN
RESET
OFF
+5
Vb
+15V
-15V
TO/FROM ENCODER - 2 CIRCUIT

CONN. 1500 TO CONN. 1090 ON DECODER CIRCUIT
CONN. 1503 TO CONN. 1603 ON SERVO CIRCUIT
CONN. 1505 TO CONN. 1800 ON CONTROL AND DISPLAY

ENCODER-1

ALFA0	- Absorption Set
ALFALS	- Absorption Loop Switch
AM	- Additional Mute
ATT	- Attenuate
CE1-4	- Chip Enable
CECS	- CIRC EFM Chip Select
CEPB	- CIRC EFM Pause Bit
CERES	- CIRC EFM Reset
CLK	- System Clock Input
CLK1-3	- System Clock Input
CRI	- Counter Reset Inhit
D0 - 7	- Data Bus Bit 0 - 7
DACK	- Display Acknowledge
DCLK	- Display Clock
DDIN	- Display Data Input
DDOUT	- Display Data Output
DIIRQ	- Digital Input Interrupt Request
DSEL	- Display Select
DSSY	- Decoder Subcode Sync
EFM	- Eight to Fourteen Modulation
EFMCLK	- EFM Clock
EFMD	- Eight to Fourteen Modulation Detect
ERRPW	- Motor Control Signal Output
FSO	- Laser Power Set
GND	- Ground
IMSTRT	- Start New Message U bit Indication
INSEL	- Input Selector
IR	- Infrared Receiver Signal
LASWR	- Laser Write/Read
LEVLH	- Analog Level Left High
LEVLL	- Analog Level Left Low
LEVRH	- Analog Level Right High
LEVRL	- Analog Level Right Low
LTCLK	- Interface Data Bit Clock
LTCNT0-1	- Interface Control
LTDAT	- Interface Databus
LTEN	- Interface Enable
MCK	- Master Clock
MCSEL	- Motor Control Select
MERR	- Motor Control Error Signal
MSC	- External Motor Control Input
NCS	- Output Enable
NIRQ	- Interrupt Request
NRD	- Read Input
POWOK	- Laser Power OK
PPN	- Normalized Push Pull Signal
PPW1 - 7	- Programmable Pulse Width Outputs
QCL	- Q-channel Clock
QDA	- Q-channel Data
QRA	- Q-channel Request Acknowledge
RD	- Read
RXD	- Serial Data
SACK	- Servo Acknowledge
SCN	- Scan Enable
SDAT	- Servo Data
SERPAR	- Interface Mode Selection
SETSY	- Setting Sync Signal
SREQ	- Servo Request
SRST	- Servo Reset
SSEL	- Source Select
SUBCSYNC	- Subcode Sync Input
TRIN	- Tray In Switch
TRMOT	- Tray Motor Control
TROUT	- Tray Out Switch
TXD	- Serial Clock
WOBBLE	- Wobble Input
WPCS	- Wobble Processor Chip Select

ENCODER PANEL COMPONENT SIDE

1300	F11
1301	F12
1340	F10
1400	E7
1420	D12
1421	D12
1422	C12
1423	B12
1424	C10
1425	A11
1480	C1
1500	F5
1501	F6
1502	B7
1503	B6
1504	B4
1505	B1
1510	A2
1511	D2
2300	E11
2301	G11
2302	E11
2303	F11
2304	F11
2305	G10
2306	F11
2307	F10
2308	F10
2309	F11
2340	E9
2341	F10
2342	F9
2343	F8
2344	E9
2345	E10
2346	F8
2347	F9
2348	G8
2349	F7
2350	E7
2351	E10
2352	E10
2353	F10
2354	F8
2355	E8
2356	E9
2357	F9
2358	E9
2359	F9
2360	F10
2361	E10
2370	B9
2371	B9
2372	B9
2373	C9
2374	C10
2375	C10
2376	D10
2377	D10
2378	C9
2379	C10
2380	C9
2381	C10
2382	D9
2383	D9
2384	B5
2385	B5
2386	D9
2387	D8
2400	E9
2401	E8
2402	E8
2403	E8
2404	E8
2420	B11
2421	B11
2422	C11
2423	C11
2424	D10
2425	C11
2426	D11
2427	C11
2428	C11
2429	C10
2430	C11
2431	C11
2432	B11
2433	B11
2434	D11
2435	D10
2436	E11
2450	B6
2451	B6
2452	C7
2453	B7
2454	B7
2455	B8
2456	B6
2457	D4
2458	C5
2459	D4
2460	D4
2461	B3
2462	C3
2463	B6
2480	B8
2481	B8
2482	D3
2483	C1
2484	C1
2485	D1
2486	C1
2487	D2
2488	F2
2489	E2
2490	D4
2491	C1
2492	F2
2493	F2
2494	F2
2495	D6
2496	F5
2497	C1
2498	D1
2499	E3
2500	E3
2501	E2
2502	F4
2503	F4
2504	F4
2505	F4
2540	B12
2750	E5
2751	E6
2752	E6
2753	D6
2754	E4
2755	D5
2756	E4
2757	E4
2758	E6
2759	E5
2760	E4
2761	E5
2762	D5
2763	D5
2764	D4
2765	E5
2766	E3
2767	E3
2768	D3
2769	D3
3029	B1
3300	E11
3301	F11
3302	F11
3303	F11
3304	E11
3305	F10
3306	E11
3307	G11
3308	F11
3309	F11
3340	F10
3341	F10
3342	E10
3343	E9
3344	F9
3345	F8
3346	F9
3347	F9
3348	F8
3349	E7
3350	F7
3351	E10
3352	F10
3353	G8
3354	F8
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3373	C9
3374	D9
3375	D10
3376	D10
3377	D10
3378	B10
3379	D9
3380	C9
3381	D9
3382	D9
3383	C9
3385	B5
3386	C5
3387	D9
3400	E9
3401	E8
3402	E9
3403	E8
3404	E8
3420	B11
3421	B11
3422	E11
3423	D11
3424	C11
3425	D10
3426	D11
3427	C10
3428	C10
3429	D10
3430	D11
3431	C11
3432	C11
3433	C11
3434	C11
3435	B11
3436	C12
3438	C11
3442	C10
3443	E11
3444	D10
3445	D11
3446	D11
3447	D10
3448	D10
3449	D10
3450	C5
3451	C5
3452	B7
3453	B7
3454	B7
3455	B7
3456	B6
3457	C5
3458	D4
3459	C5
3460	C5
3461	C4
3462	B3
3463	B3
3464	B3
3480	C7
3481	C1
3482	C1
3484	F4
3485	B3
3486	B5
3487	B5
3488	B5
3489	E3
3490	B1
3491	B1
3492	B1
3493	B1
3494	F2
3495	F3
3496	F3
3497	B2
3498	F2
3499	B3
3500	B3
3501	E5
3502	D7
3503	F3
3504	D1
3508	C5
3509	C7
3510	D7
3511	D7
3512	B1
3513	B5
3514	F2
3515	D3
3516	E2
3517	E2
3518	E2
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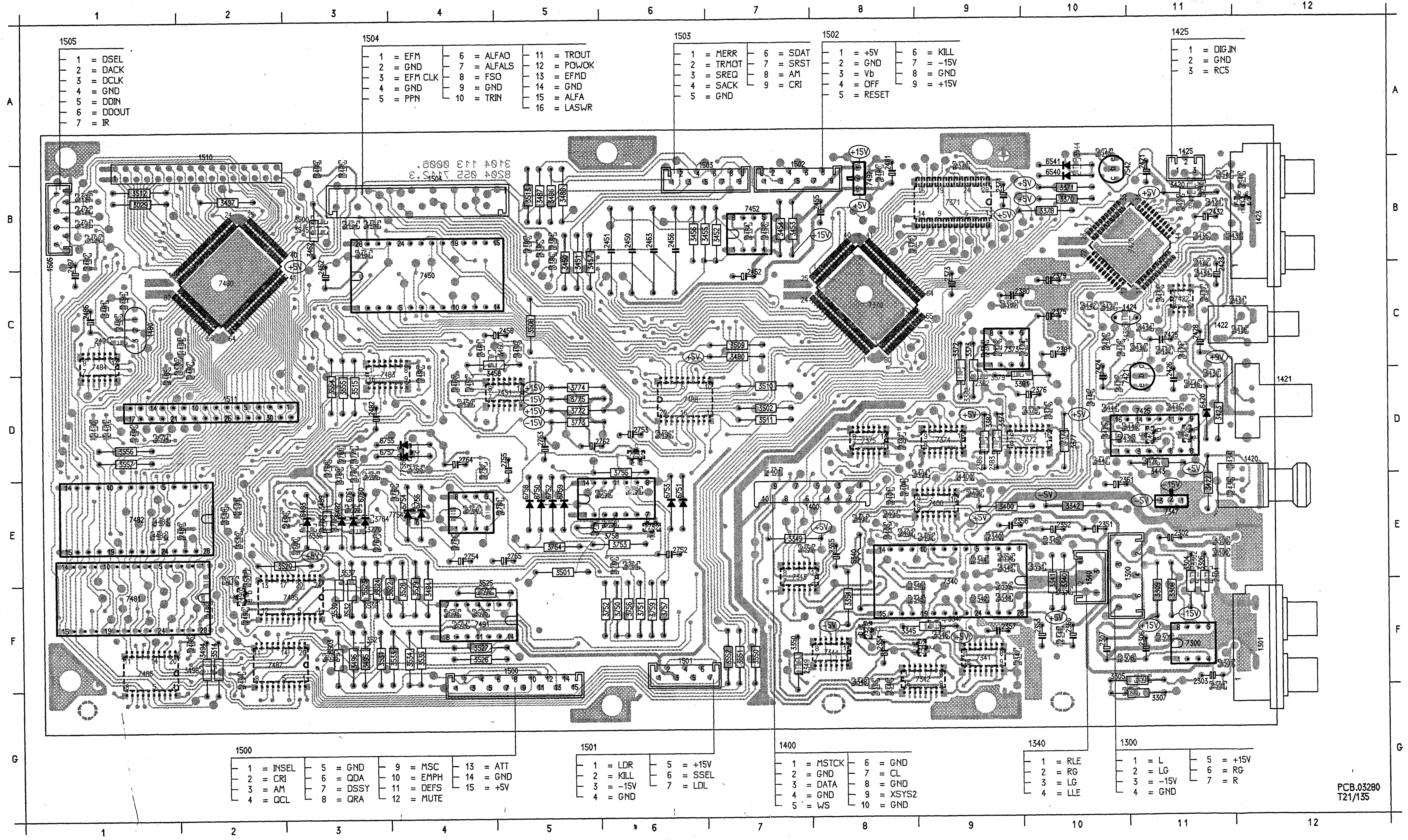
3554	D3
3555	D3
3556	D1
3557	D1
3750	F6
3751	F6
3752	F6
3753	E6
3754	E5
3755	D6
3756	F6
3757	F6
3758	E6
3759	F6
3760	E6
3761	E6
3762	E4
3763	D4
3764	E3
3765	E3
3766	E3
3767	E3
3768	E3
3769	E3
3770	E3
3771	D3
3772	D5
3773	D5
3774	D5
3775	D5
4400	E9
4401	D7
4480	D1
4481	D1
4482	E1
4483	E1
4484	C2
5340	E8
6420	D11
6482	E3
6483	E3
6540	B10
6541	B10
6750	E5
6751	E6
6752	E5
6753	E6
6754	E4
6755	D3
6756	E4
6757	D3
6758	E5
6759	E5
6760	E3
6761	E3
7300	F11
7340	F9
7341	F9
7342	F8
7343	E7
7344	F8
7345	F9
7346	F8
7347	E11
7370	C8
7371	B9
7372	D10
7373	C9
7374	D9
7375	D8
7400	E9
7420	B11
7421	D11
7422	C11
7425	D11
7426	D11
7427	D11
7450	C4
7451	D5
7452	B7
7480	C2
7481	F1
7482	E1
7483	D3
7484	C1
7485	F2
7486	F1
7487	F2
7488	D6
7489	F5
7490	F2
7491	F4
7492	B8
7542	B11
7543	B12
7752	E6
7753	D6
7754	E3
7755	D4


1
2
3
4
5
6
7
8
9
10
11
12
A
B
C
D
E
F
G
1505
1 = DSEL
2 = DACK
3 = DCLK
4 = GND
5 = DDIN
6 = DDOUT
7 = IR
1504
1 = EFM
2 = GND
3 = EFM CLK
4 = GND
5 = PPN
6 = ALFAO
7 = ALFALS
8 = FSO
9 = GND
10 = TRIN
11 = TROUT
12 = POWOK
13 = EFMD
14 = GND
15 = ALFA
16 = LASWR
1503
1 = MERR
2 = TRMOT
3 = SREQ
4 = SACK
5 = GND
6 = SDAT
7 = SRST
8 = AM
9 = CRI
1502
1 = +5V
2 = GND
3 = Vb
4 = OFF
5 = RESET
6 = KILL
7 = −15V
8 = GND
9 = +15V
1425
1 = DIG.IN
2 = GND
3 = RC5
3104 113 0000.
8204 055 7442.3
1500
1 = INSEL
2 = CRI
3 = AM
4 = QCL
5 = GND
6 = QDA
7 = DSSY
8 = QRA
9 = MSC
10 = EMPH
11 = DEFS
12 = MUTE
13 = ATT
14 = GND
15 = +5V
1501
1 = LDR
2 = KILL
3 = −15V
4 = GND
5 = +15V
6 = SSEL
7 = LDL
1400
1 = MSTCK
2 = GND
3 = DATA
4 = GND
5 = WS
6 = GND
7 = CL
8 = GND
9 = XSYS2
10 = GND
1340
1 = RLE
2 = RG
3 = LG
4 = LLE
1300
1 = L
2 = LG
3 = −15V
4 = GND
5 = +15V
6 = RG
7 = R
PCB.03280
T21/135

ENCODER PANEL SOLDER SIDE

1300	F11
1301	F12
1340	F10
1400	E7
1420	D12
1421	D12
1422	C12
1423	B12
1424	C10
1425	A11
1480	C1
1500	F5
1501	F6
1502	B7
1503	B6
1504	B4
1505	B1
1510	A2
1511	D2
2300	E11
2301	G11
2302	E11
2303	F11
2304	F11
2305	G10
2306	F11
2307	F10
2308	F10
2309	F11
2340	E9
2341	F10
2342	F9
2343	F8
2344	E9
2345	E10
2346	F8
2347	F9
2348	G8
2349	F7
2350	E7
2351	E10
2352	E10
2353	F10
2354	F8
2355	E8
2356	E9
2357	F9
2358	E9
2359	F9
2360	F10
2361	E10
2370	B9
2371	B9
2372	B9
2373	C9
2374	C10
2375	C10
2376	D10
2377	D10
2378	C9
2379	C10
2380	C9
2381	C10
2382	D9
2383	D9
2384	B5
2385	B5
2386	D9
2387	D8
2400	E9
2401	E8
2402	E8
2403	E8
2404	E8
2420	B11
2421	B11
2422	C11
2423	C11
2424	D10
2425	C11
2426	D11
2427	C11
2428	C11
2429	C10
2430	C11
2431	C11
2432	B11
2433	B11
2434	D11
2435	D10
2436	E11
2450	B6
2451	B6
2452	C7
2453	B7
2454	B7
2455	B8
2456	B6
2457	D4
2458	C5
2459	D4
2460	D4
2461	B3
2462	C3
2463	B6
2480	B8
2481	B8
2482	D3
2483	C1
2484	C1
2485	D1
2486	C1
2487	D2
2488	F2
2489	E2
2490	D4
2491	C1
2492	F2
2493	F2
2494	F2
2495	D6
2496	F5
2497	C1
2498	D1
2499	E3
2500	E3
2501	E2
2502	F4
2503	F4
2504	F4
2505	F4
2540	B12
2750	E5
2751	E6
2752	E6
2753	D6
2754	E4
2755	D5
2756	E4
2757	E4
2758	E6
2759	E5
2760	E4
2761	E5
2762	D5
2763	D5
2764	D4
2765	E5
2766	E3
2767	E3
2768	D3
2769	D3
3029	B1
3300	E11
3301	F11
3302	F11
3303	F11
3304	E11
3305	F10
3306	E11
3307	G11
3308	F11
3309	F11
3340	F10
3341	F10
3342	E10
3343	E9
3344	F9
3345	F8
3346	F9
3347	F9
3348	F8
3349	E7
3350	F7
3351	E10
3352	F10
3353	G8
3354	F8
3370	B10
3371	B10
3372	C9
3373	C9
3374	D9
3375	D10
3376	D10
3377	D10
3378	B10
3379	D9
3380	C9
3381	D9
3382	D9
3383	C9
3385	B5
3386	C5
3387	D9
3400	E9
3401	E8
3402	E9
3403	E8
3404	E8
3420	B11
3421	B11
3422	E11
3423	D11
3424	C11
3425	D10
3426	D11
3427	C10
3428	C10
3429	D10
3430	D11
3431	C11
3432	C11
3433	C11
3434	C11
3435	B11
3436	C12
3438	C11
3442	C10
3443	E11
3444	D10
3445	D11
3446	D11
3447	D10
3448	D10
3449	D10
3450	C5
3451	C5
3452	B7
3453	B7
3454	B7
3455	B7
3456	B6
3457	C5
3458	D4
3459	C5
3460	C5
3461	C4
3462	B3
3463	B3
3464	B3
3480	C7
3481	C1
3482	C1
3484	F4
3485	B3
3486	B5
3487	B5
3488	B5
3489	E3
3490	B1
3491	B1
3492	B1
3493	B1
3494	F2
3495	F3
3496	F3
3497	B2
3498	F2
3499	B3
3500	B3
3501	E5
3502	D7
3503	F3
3504	D1
3508	C5
3509	C7
3510	D7
3511	D7
3512	B1
3513	B5
3514	F2
3515	D3
3516	E2
3517	E2
3518	E2
3519	E2
3520	E2
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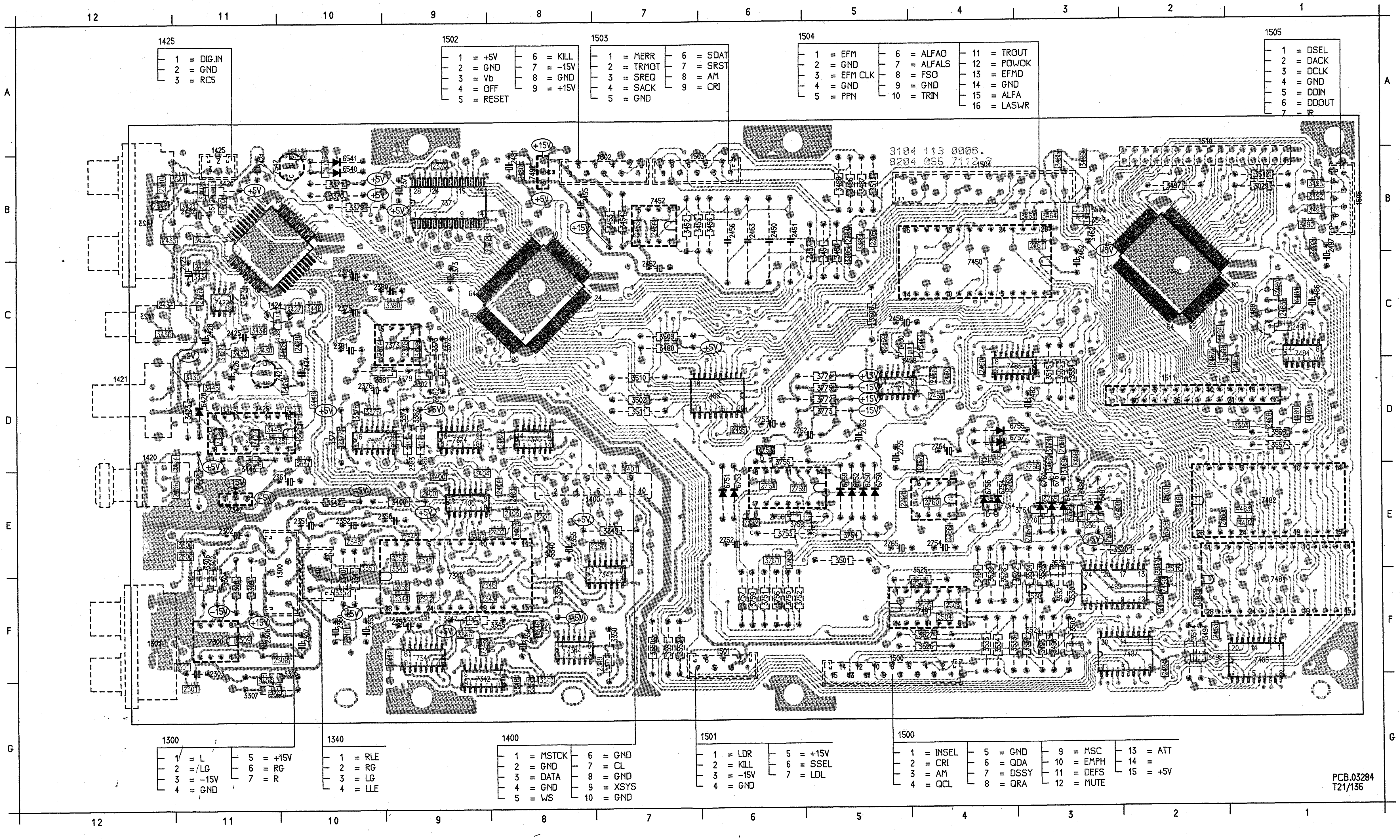
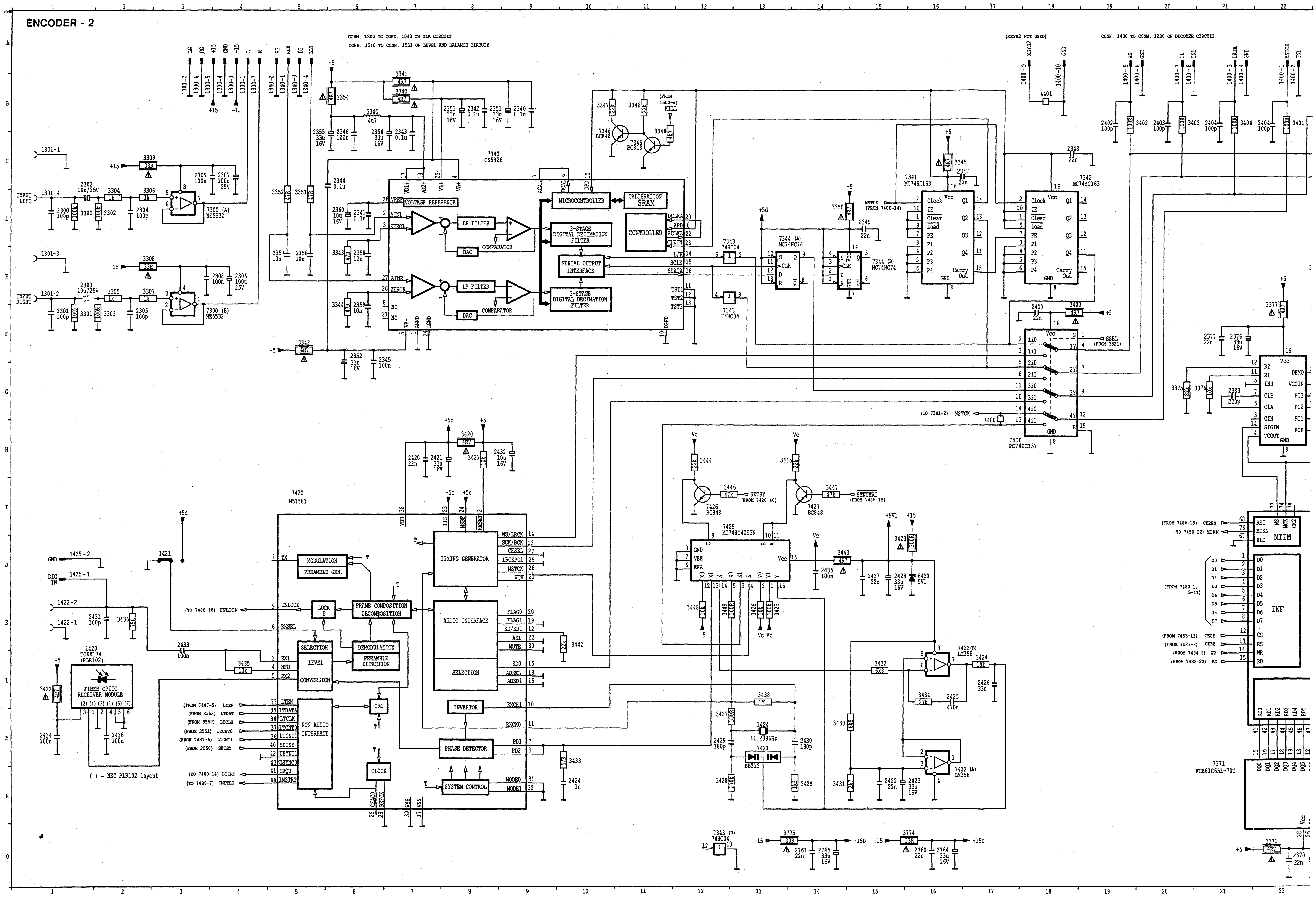
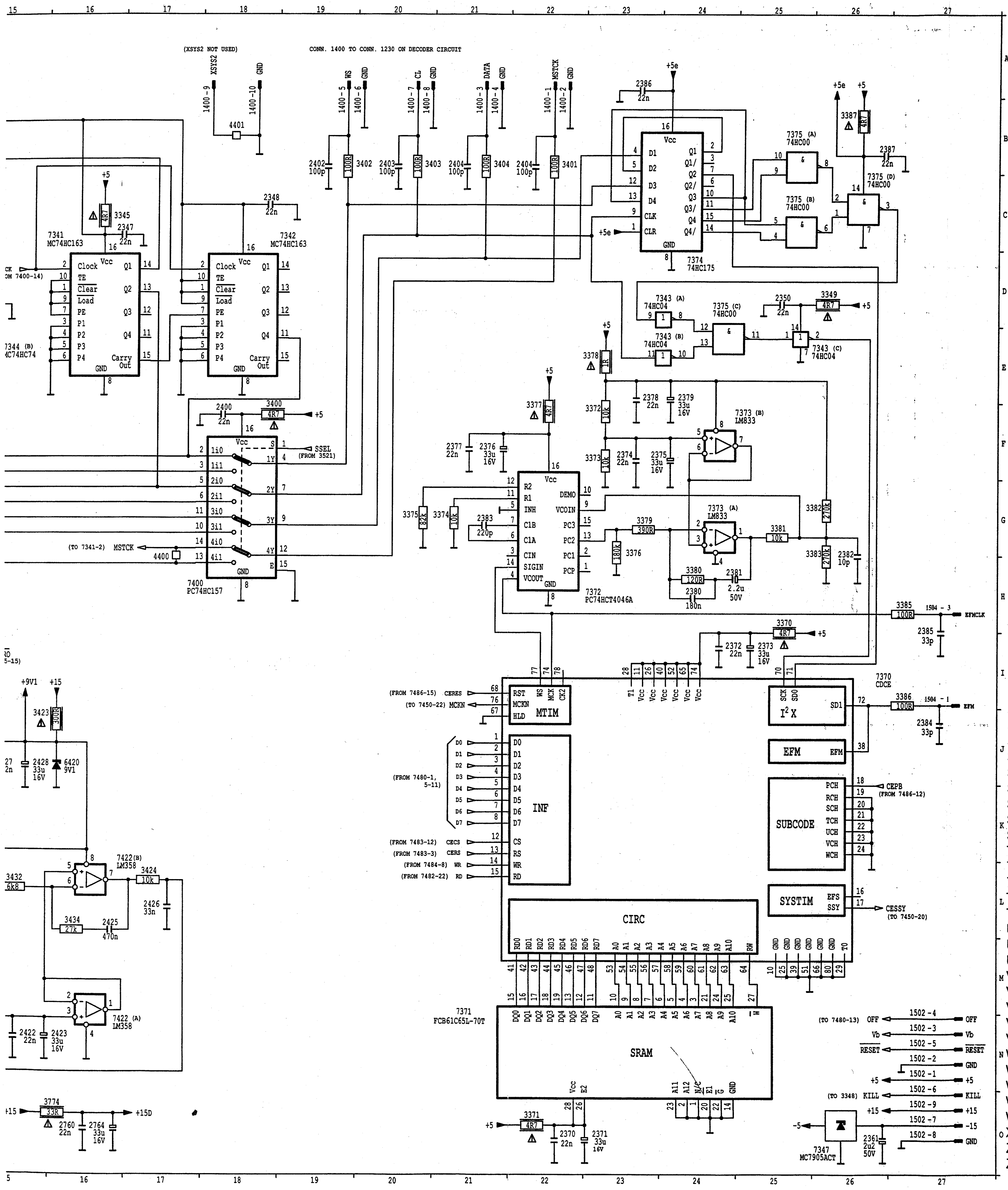
3522	F4
3523	F3
3524	F3
3525	F4
3526	F4
3527	F4
3528	F4
3529	F4
3530	F3
3531	F3
3532	F3
3533	F4
3534	F4
3535	F4
3536	E3
3537	E3
3538	F3
3539	D2
3540	B11
3541	B11
3542	B11
3543	A10
3544	B10
3545	B3
3550	F7
3551	F7
3552	F7
3553	F3
3554	D3
3555	D3
3556	D1
3557	D1
3750	F6
3751	F6
3752	F6
3753	E6
3754	E5
3755	D6
3756	F6
3757	F6
3758	E6
3759	F6
3760	E6
3761	E6
3762	E4
3763	D4
3764	E3
3765	E3
3766	E3
3767	E3
3768	E3
3769	E3
3770	E3
3771	D3
3772	D5
3773	D5
3774	D5
3775	D5
4400	E9
4401	D7
4480	D1
4481	D1
4482	E1
4483	E1
4484	C2
5340	E8
6420	D11
6482	E3
6483	E3
6540	B10
6541	B10
6750	E5
6751	E6
6752	E5
6753	E6
6754	E4
6755	D3
6756	E4
6757	D3
6758	E5
6759	E5
6760	E3
6761	E3
7300	F11
7340	F9
7341	F9
7342	F8
7343	E7
7344	F8
7345	F9
7346	F8
7347	E11
7370	C8
7371	B9
7372	D10
7373	C9
7374	D9
7375	D8
7400	E9
7420	B11
7421	D11
7422	C11
7425	D11
7426	D11
7427	D11
7450	C4
7451	D5
7452	B7
7480	C2
7481	F1
7482	E1
7483	D3
7484	C1
7485	F2
7486	F1
7487	F2
7488	D6
7489	F5
7490	F2
7491	F4
7492	B8
7542	B11
7543	B12
7752	E6
7753	D6
7754	E3
7755	D4

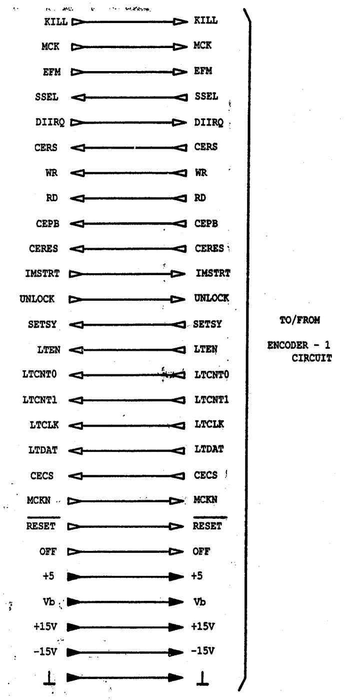

12
11
10
9
8
7
6
5
4
3
2
1
A
B
C
D
E
F
G
1425
1 = DIG.IN
2 = GND
3 = RC5
1502
1 = +5V
2 = GND
3 = Vb
4 = OFF
5 = RESET
6 = KILL
7 = -15V
8 = GND
9 = +15V
1503
1 = MERR
2 = TRMOT
3 = SREQ
4 = SACK
5 = GND
6 = SDAT
7 = SRST
8 = AM
9 = CRI
1504
1 = EFM
2 = GND
3 = EFM CLK
4 = GND
5 = PPN
6 = ALFAO
7 = ALFALS
8 = FSO
9 = GND
10 = TRIN
11 = TROUT
12 = POWOK
13 = EFMD
14 = GND
15 = ALFA
16 = LASWR
1505
1 = DSEL
2 = DACK
3 = DCLK
4 = GND
5 = DDIN
6 = DDOUT
7 = IR
3104 113 0006.
8204 055 7112.
7370
7450
7480
7482
7481
1300
1 = L
2 = /LG
3 = -15V
4 = GND
5 = +15V
6 = RG
7 = R
1340
1 = RLE
2 = RG
3 = LG
4 = LLE
1400
1 = MSTCK
2 = GND
3 = DATA
4 = GND
5 = WS
6 = GND
7 = CL
8 = GND
9 = XSYS
10 = GND
1501
1 = LDR
2 = KILL
3 = -15V
4 = GND
5 = +15V
6 = SSEL
7 = LDL
1500
1 = INSEL
2 = CRI
3 = AM
4 = QCL
5 = GND
6 = QDA
7 = DSSY
8 = QRA
9 = MSC
10 = EMPH
11 = DEFS
12 = MUTE
13 = ATT
14 =
15 = +5V
PCB.03284
T21/136

ENCODER CIRCUIT DIAGRAM

ENCODER - 2


CONN. 1300 TO CONN. 1040 ON XLR CIRCUIT
CONN. 1340 TO CONN. 1551 ON LEVEL AND BALANCE CIRCUIT
(XSYS2 NOT USED)
CONN. 1400 TO CONN. 1230 ON DECODER CIRCUIT
INPUT LEFT
INPUT RIGHT
7300 (A) NE5532
7300 (B) NE5532
7340 CS5326
VOLTAGE REFERENCE
LP FILTER
COMPARATOR
DAC
MICROCONTROLLER
CALIBRATION SRAM
3-STAGE DIGITAL DECIMATION FILTER
CONTROLLER
SERIAL OUTPUT INTERFACE
7343 74HC04
7344 (A) MC74HC74
7344 (B) MC74HC74
7341 MC74HC163
7342 MC74HC163
7345 BC848
7346 BC858
7400 PC74HC157
MSTCK (FROM 7400-14)
SSEL (FROM 3521)
(TO 7341-2) MSTCK
7420 M51581
TIMING GENERATOR
AUDIO INTERFACE
SELECTION
INVERTOR
PHASE DETECTOR
SYSTEM CONTROL
MODULATION
PREAMBLE GEN.
LOCK P
FRAME COMPOSITION DECOMPOSITION
SELECTION LEVEL CONVERSION
DEMODULATION
PREAMBLE DETECTION
NON AUDIO INTERFACE
CRC
CLOCK
(TO 7488-18) UNLOCK
(FROM 7487-5) LTEN
(FROM 3553) LTDAT
(FROM 3552) LTCLK
(FROM 3551) LTCNT0
(FROM 7487-6) LTCNT1
(FROM 3550) SETSY
(TO 7480-14) DIIRQ
(TO 7488-7) IMSTRT
1420 TORX174 (PLR102)
FIBER OPTIC RECEIVER MODULE
( ) = NEC PLR102 layout
GND
DIG IN
7426 BC848
7427 BC848
SETSY (FROM 7420-40)
SYNCERO (FROM 7485-15)
7425 MC74HC4053N
1424 11.2896Hz
7421 BB212
7422 (B) LM358
7422 (A) LM358
6420 9V1
7343 (D) 74HC04
MTIM
INF
7371 FCB61C65L-70T
(FROM 7486-15) CERES
(TO 7450-22) MCKN
(FROM 7480-1, 5-11)
(FROM 7483-12) CECS
(FROM 7483-3) CERS
(FROM 7484-8) WR
(FROM 7482-22) RD


(XSYS2 NOT USED)
CONN. 1400 TO CONN. 1230 ON DECODER CIRCUIT
XSYS2
GND
WS
CL
DATA
MSTCK
1400-9
1400-10
1400-5
1400-6
1400-7
1400-8
1400-3
1400-4
1400-1
1400-2
4401
2402 100p
3402
2403 100p
3403
2404 100p
3404
2404 100p
3401
2386 22n
+5e
+5
7374 74HC175
Vcc
D1 D2 D3 D4 CLK CLR
Q1 Q1/ Q2 Q2/ Q3 Q3/ Q4 Q4/
GND
+5e
3387
2387 22n
7375 (A) 74HC00
7375 (B) 74HC00
7375 (D) 74HC00
2348 22n
3345
2347 22n
7341 MC74HC163
7342 MC74HC163
Clock
TE
Clear
Load
PE
P1
P2
P3
P4
Q1 Q2 Q3 Q4
Carry Out
GND
CK
(FROM 7400-14)
7344 (B) MC74HC74
7343 (A) 74HC04
7343 (B) 74HC04
7343 (C) 74HC04
7375 (C) 74HC00
2350 22n
3349 4R7
3378
2400 22n
3400 4R7
SSEL (FROM 3521)
1i0 1i1 2i0 2i1 3i0 3i1 4i0 4i1
1Y 2Y 3Y 4Y
S
E
7400 PC74HC157
(TO 7341-2) MSTCK
4400
3377
3372
2378 22n
2379 33u 16V
7373 (B) LM833
2377 22n
2376 33u 16V
3373
2374 22n
2375 33u 16V
7372 PC74HCT4046A
R2 R1 INH C1B C1A CIN SIGIN VCOUT
DEMO VCOIN PC3 PC2 PC1 PCP
3375 82k
3374 10k
2383 220p
3379 390R
7373 (A) LM833
3376 180k
3380 120R
2380 180n
2381 2.2u 50V
3381 10k
3382 270k
3383 270k
2382 10p
3385 100R
1504 - 3
EFMCLK
2385 33p
3370 4R7
2372 22n
2373 33u 16V
7370 CDCE
(FROM 7486-15) CERES
(TO 7450-22) MCKN
RST MCKN HLD
MTIM
WS MCK CK2
T1
Vcc
SCK SD0
I²X
SD1
3386 100R
1504 - 1
EFM
2384 33p
EFM
(FROM 7480-1, 5-11)
D0 D1 D2 D3 D4 D5 D6 D7
INF
CS RS WR RD
(FROM 7483-12) CECS
(FROM 7483-3) CERS
(FROM 7484-8) WR
(FROM 7482-22) RD
PCH RCH SCH TCH UCH VCH WCH
SUBCODE
CEPB (FROM 7486-12)
SYSTIM
EFS SSY
CESSY (TO 7450-20)
CIRC
RD0 RD1 RD2 RD3 RD4 RD5 RD6 RD7
A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10
RW
GND
T0
7371 FCB61C65L-70T
DQ0 DQ1 DQ2 DQ3 DQ4 DQ5 DQ6 DQ7
SRAM
Vcc E2
A11 A12 N/C E1 G GND
3371 4R7
2370 22n
2371 33u 16V
(TO 7480-13) OFF
Vb
RESET
GND
+5
(TO 3348) KILL
+15
-15
1502-4 1502-3 1502-5 1502-2 1502-1 1502-6 1502-9 1502-7 1502-8
7347 MC7905ACT
2361 2u2 50V
+9V1
+15
3423
2428 33u 16V
6420 9V1
27 2n
7422 (B) LM358
3424 10k
3432 6k8
2426 33n
3434 27k
2425 470n
7422 (A) LM358
2422 22n
2423 33u 16V
3774 33R
+15D
2760 22n
2764 33u 16V
15 16 17 18 19 20 21 22 23 24 25 26 27


KILL
MCK
EFM
SSEL
DIIRQ
CERS
WR
RD
CEPB
CERES
IMSTRT
UNLOCK
SETSY
LTEN
LTCNT0
LTCNT1
LTCLK
LTDAT
CECS
MCKN
RESET
OFF
+5
Vb
+15V
-15V
TO/FROM ENCODER - 1 CIRCUIT

1300	B 4	2385	I27	3402	B19
1300	B 4	2386	A23	3403	B20
1300	B 4	2387	B26	3404	B21
1300	B 4	2400	F18	3420	H 8
1300	B 3	2402	B19	3421	H 8
1300	B 3	2403	B20	3422	L 1
1300	B 3	2404	B21	3423	J15
1301	E 1	2404	B22	3424	L17
1301	E 1	2420	H 7	3425	K13
1301	D 1	2421	H 8	3426	K13
1301	C 1	2422	N15	3427	M12
1340	B 5	2423	N16	3428	N12
1340	B 5	2424	N10	3429	N14
1340	B 5	2425	L16	3430	M14
1340	B 5	2426	L17	3431	N14
1400	B18	2427	J15	3432	L15
1400	B18	2428	J15	3433	M10
1400	B19	2429	M12	3434	L16
1400	B20	2430	M14	3435	L 4
1400	B20	2431	K 1	3436	K 2
1400	B20	2432	H 9	3438	L13
1400	B21	2433	K 3	3442	K10
1400	B21	2434	M 1	3443	J14
1400	B22	2435	J14	3444	H12
1400	B22	2436	M 2	3445	H13
1420	K 2	2760	O16	3446	I12
1421	J 3	2761	O14	3447	I14
1422	K 1	2764	O16	3448	K12
1422	K 1	2765	O14	3449	K12
1424	M13	3300	D 1	3774	O15
1425	J 1	3301	F 1	3775	O13
1425	J 1	3302	D 2	4400	H17
1502	M27	3303	F 2	4401	B18
1502	N27	3304	D 2	5340	B 6
1502	N27	3305	E 2	6420	J16
1502	N27	3306	D 2	7300	F 3
1502	N27	3307	E 2	7300	D 3
1502	N27	3308	E 2	7340	C 8
1502	O27	3309	C 2	7341	C15
1502	O27	3340	B 7	7342	C19
1502	O27	3341	B 7	7343	O12
1504	I27	3342	F 5	7343	F13
1504	H27	3343	E 6	7343	D13
2300	D 1	3344	F 6	7343	E23
2301	F 1	3345	C16	7343	D23
2302	C 1	3346	B11	7343	E26
2303	E 1	3347	B10	7344	E15
2304	D 2	3348	C11	7344	D13
2305	F 2	3349	D26	7345	C11
2306	E 4	3350	D14	7346	C10
2307	C 4	3351	D 5	7347	O26
2308	E 4	3352	D 5	7370	I26
2309	C 3	3354	B 6	7371	M21
2340	B 9	3370	H25	7372	H23
2341	D 6	3371	O22	7373	G24
2342	B 8	3372	F23	7373	F24
2343	C 7	3373	F23	7374	D24
2344	C 6	3374	G21	7375	D24
2345	F 7	3375	G20	7375	C25
2346	C 6	3376	G23	7375	B25
2347	C16	3377	F22	7375	C26
2348	C18	3378	E22	7400	H17
2349	D15	3379	G23	7420	I 5
2350	D25	3380	H24	7421	M13
2351	B 9	3381	G25	7422	N16
2352	F 6	3382	G25	7422	K16
2353	B 8	3383	G25	7425	I12
2354	C 6	3385	H27	7426	I12
2355	C 5	3386	I27	7427	I14
2356	E 5	3387	B26		
2357	E 5	3400	F18		
2358	E 6	3401	B22		
2359	F 6				
2360	D 6				
2361	O26				
2370	O22				
2371	O23				
2372	I25				
2373	I25				
2374	F23				
2375	F23				
2376	F21				
2377	F21				
2378	E23				
2379	E24				
2380	H24				
2381	H24				
2382	G26				
2383	G21				
2384	J27				

CONN. 1502 TO CONN. P4 ON POWER SUPPLY CIRCUIT

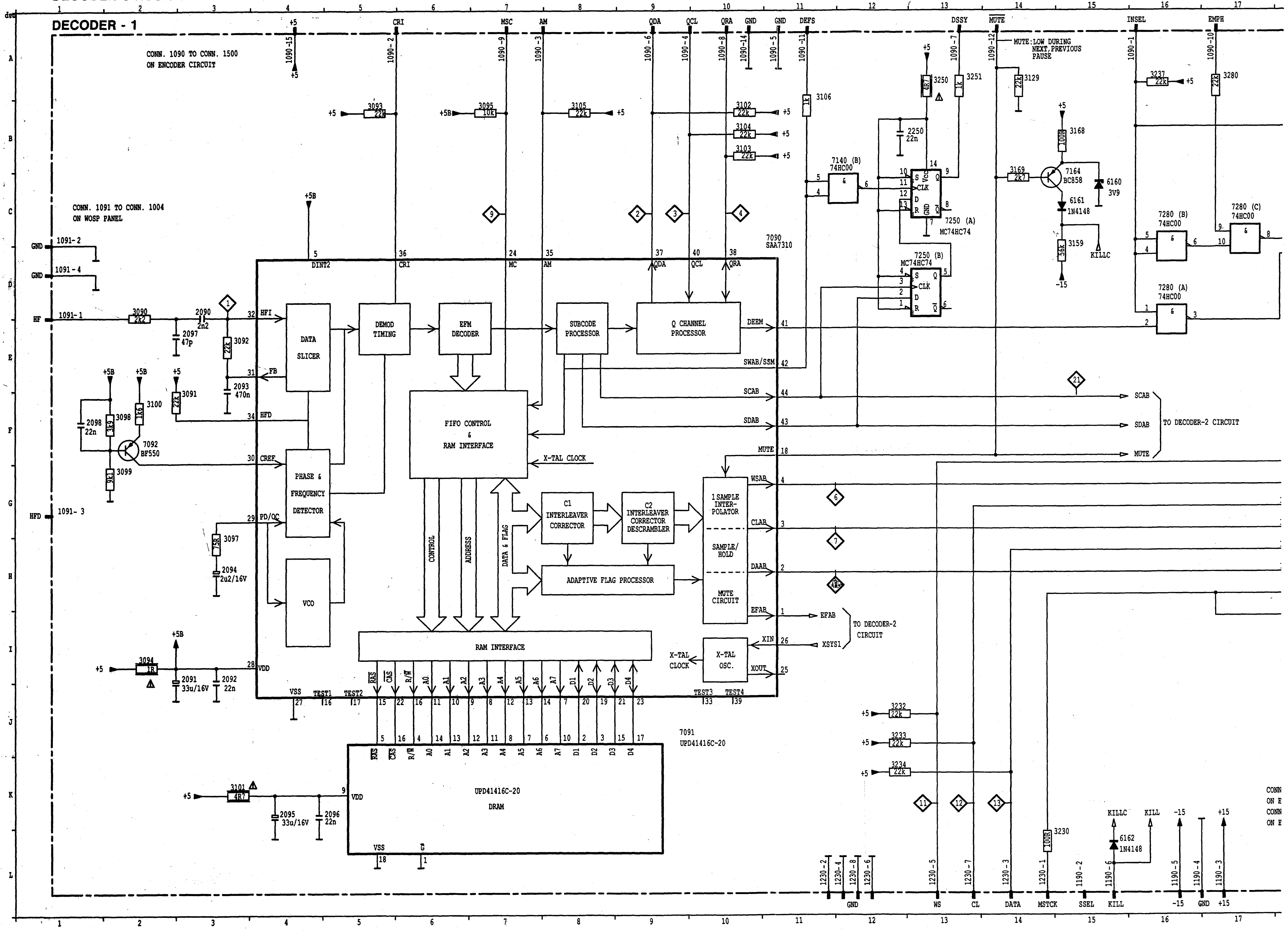
CONN. 1504 TO CONN. 1000 ON WOSP CIRCUIT

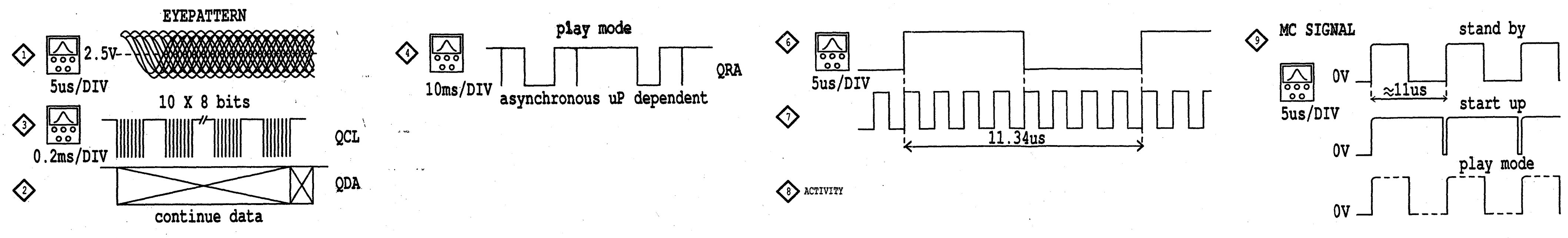
ENCODER-2

A0-10	- RAM Addressbus Bit 0 - 10
ACAL	- Analog Calibrate
ACLKA	- Analog Section Output Clock
ADSDI	- Serial Data Input AD Converter Data
ADSEL	- Serial Date Output Source Selection
AGND	- Analog Ground
AINL	- Left Channel Analog Input
AINR	- Right Channel Analog Input
APD	- Analog Power Down
ASL	- Audio Sample Length
CECS	- CIRC EFM Chip Select
CEFS	- CIRC EFM Frame Sync
CEPB	- CIRC EFM Pause Bit
CERES	- CIRC EFM Reset
CERS	- CIRC EFM Register Select
CESSY	- CIRC EFM Subcode Sync
CK2	- Master Clock /2
CKACO	- Frequency Accuracy Check Output
CKSEL	- Master Clock Frequency Select
CL	- Clock Signal
CLKIN	- Master Clock Input
CS	- Chip Select
D0 - 7	- Databus Bit 0 - 7
DCAL	- Digital Calibrate Output
DCLKA	- Digital Section Clock Input
DGND	- Digital Ground
DIIRQ	- Digital Input Interrupt Request
DPD	- Digital Power Down
EFM	- Eight to Fourteen Modulation
FLAGI	- Error Flag Input
FLAGO	- Error Flag Output
GND	- Ground
HLD	- Hold Signal
IIS	- IS Format Selection
IMSTRT	- Start New Message U bit Indication
IRQU	- Indication Information Message
L	- Left
L/R	- Left/Right Select
LDL	- Level Detection Left
LDR	- Level Detection Right
LEVLH	- Analog Level Left High
LEVLL	- Analog Level Left Low
LEVRH	- Analog Level Right High
LEVRL	- Analog Level Right Low
LGND	- Logic Ground
LLE	- Left Level
LRCKPOL	- Polarity LRCK Select
LTCLK	- Interface Data Bit Clock
LTCNT0-1	- Interface Control
LTDATA	- Interface Databus
LTEN	- Interface Enable
MCK	- Master Clock
MCKN	- Master Clock NOT
MODE0 - 1	- Mode Select
MSBF	- Most Significant Bit First Select
MSTCK	- Master Clock
MUTE	- Mute Control
NFR	- Output Level Convertor RX1
PCH	- Subcode PChannel
PD12	- Phase Detector Outputs
R	- Right
RCH	- Subcode RChannel
RD	- µP Read Signal
RD0 - 7	- RAM Databus Bit 0 - 7
REFCK	- Reference Clock Frequency Accuracy Check
RLE	- Right Level
RS	- Register Select
RST	- Hard Reset
RX1	- IEC Format Digital Audio Data Input (Coaxial Input)
RX2	- IEC Format Digital Audio Data Input (Optical Input)
RXCKIO	- Input/Output VCO Frequency
RXSEL	- Selection RX1 Or RX2
SCH	- Subcode S Channel
SCK	- Serial Clock (IS)
SCK/BCK	- Shift/Bit Clock Audio Data
SCLK	- Serial Output Data Clock
SD/SDI	- Serial Data (Input) Audio Databus
SD0 - 1	- Serial Data (IS)
SDATA	- Serial Data Output
SDO	- Serial Data Output Audio Databus
SETSY	- Settings Sync Signal
SSEL	- Source Select
SSY	- Subcode Sync
T0 - 1	- Test Signal
TCH	- Subcode T Channel
TST1 - 3	- Test inputs
TX	- IEC Format Digital Data Output
TXOE	- Reset
UCH	- Subcode U Channel
UNLOCK	- Indication VCO Frequency
USYNC01	- Indication Start New Frame
VA+	- Positive Analog Power
VA-	- Negative Analog Power
VCH	- Subcode V Channel
VL+	- Positive Logic Power
VREF	- Voltage reference Output
WCH	- Subcode W Channel
WCK	- Word Clock Output
WR	- µP Write Signal
WS	- Word Select Signal
WS/LRCK	- Word Select Audio Data
XSYS	- Oscillator Signal
ZEROL	- Zero Level Input Left Channel
ZEROR	- Zero Level Input Right Channel

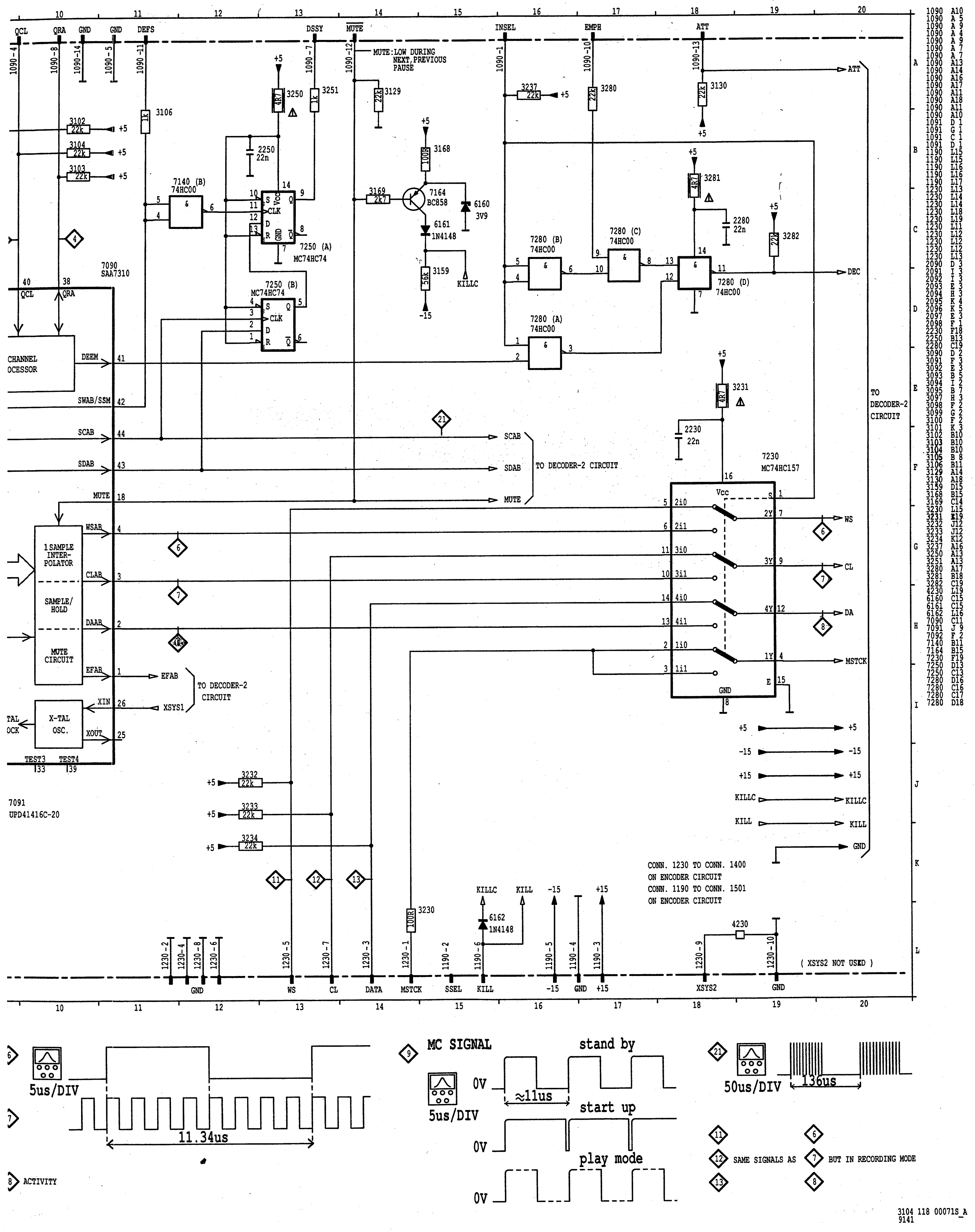
3104 118 00061S-B
9144

DECODER CIRCUIT DIAGRAM


DECODER - 1
CONN. 1090 TO CONN. 1500 ON ENCODER CIRCUIT
CONN. 1091 TO CONN. 1004 ON WOSP PANEL
MUTE:LOW DURING NEXT,PREVIOUS PAUSE
+5
CRI
MSC
AM
QDA
QCL
QRA
GND
DEFS
DSSY
MUTE
INSEL
EMPH
GND
HF
HFD
1091-1
1091-2
1091-3
1091-4
DATA SLICER
DEMOD TIMING
EFM DECODER
SUBCODE PROCESSOR
Q CHANNEL PROCESSOR
FIFO CONTROL & RAM INTERFACE
X-TAL CLOCK
PHASE & FREQUENCY DETECTOR
VCO
C1 INTERLEAVER CORRECTOR
C2 INTERLEAVER CORRECTOR DESCRAMBLER
ADAPTIVE FLAG PROCESSOR
I SAMPLE INTER-POLATOR
SAMPLE/HOLD
MUTE CIRCUIT
X-TAL OSC.
RAM INTERFACE
CONTROL
ADDRESS
DATA & FLAG
7090 SAA7310
7091 UPD41416C-20
UPD41416C-20 DRAM
7092 BF550
7140 (B) 74HC00
7250 (A) MC74HC74
7250 (B) MC74HC74
7164 BC858
6160 3V9
6161 1N4148
6162 1N4148
7280 (A) 74HC00
7280 (B) 74HC00
7280 (C) 74HC00
KILLC
KILL
SCAB
SDAB
MUTE
TO DECODER-2 CIRCUIT
EFAB
XSYS1
TO DECODER-2 CIRCUIT
WS
CL
DATA
MSTCK
SSEL
KILL
-15
GND
+15


EYEPATTERN
2.5V
5us/DIV
10 X 8 bits
0.2ms/DIV
QCL
QDA
continue data
play mode
10ms/DIV
asynchronous uP dependent
QRA
5us/DIV
11.34us
ACTIVITY
MC SIGNAL
stand by
0V
≈11us
5us/DIV
start up
0V
play mode
0V

3104 118 00071R_A

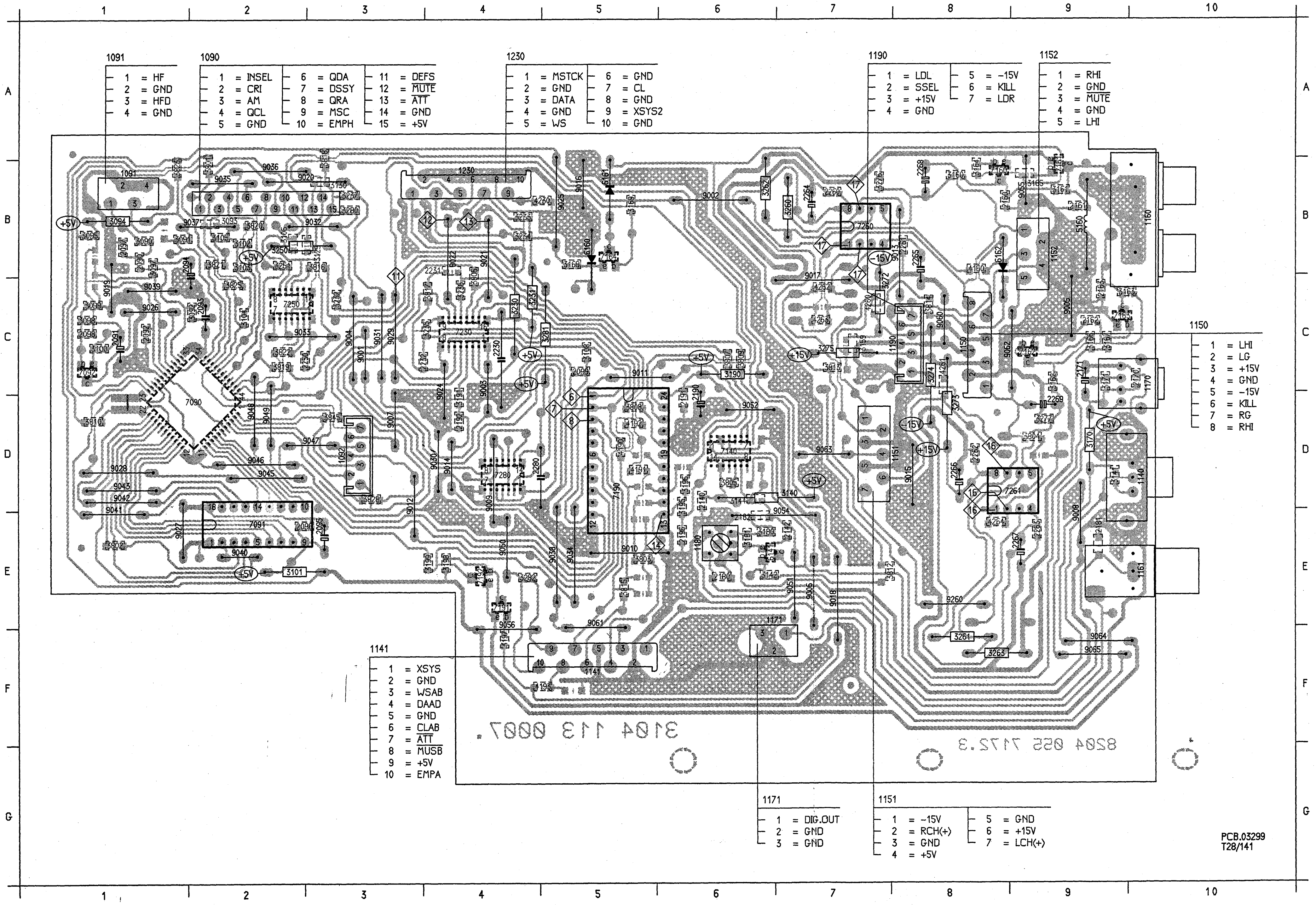

7090 SAA7310
7091 UPD41416C-20
7140 (B) 74HC00
7250 (A) MC74HC74
7250 (B) MC74HC74
7280 (A) 74HC00
7280 (B) 74HC00
7280 (C) 74HC00
7280 (D) 74HC00
7230 MC74HC157
7164 BC858
MUTE: LOW DURING NEXT, PREVIOUS PAUSE
TO DECODER-2 CIRCUIT
CONN. 1230 TO CONN. 1400 ON ENCODER CIRCUIT
CONN. 1190 TO CONN. 1501 ON ENCODER CIRCUIT
(XSYS2 NOT USED)
MC SIGNAL
stand by
start up
play mode
≈11us
5us/DIV
11.34us
50us/DIV
136us
SAME SIGNALS AS
BUT IN RECORDING MODE
ACTIVITY
3104 118 00071S_A
9141

DECODER-1

AM	- Additional Mute
ATT	- Attenuation
CL	- Clock Signal
CLAB	- Clock Signal Decoder-A to Filter-B
CREF	- Reference Current
CRI	- Counter Reset Inhibit
DA	- Data Signal
DAAB	- Data Signal Decoder-A to Filter-B
DEC	- Deemphasis Control
DEEM	- Deemphasis
DSSY	- Decoder Subcode Sync
EFAB	- Error Flag Decoder-A to Filter-B
FB	- Feed Back
GND	- Ground
HF	- High Frequency
HFD	- High Frequency Detection
HFI	- High Frequency Input
INSEL	- Input Selector
MC	- Motor Control Signal
MSC	- External Motor Control Input
MSTCK	- Master Clock
MUTE	- Mute Signal
PD/OC	- Phase Detector - Oscillator Control
QCL	- Q-Channel Clock Signal
QDA	- Q-Channel Data Signal
QRA	- Q-Channel Request Acknowledge
SCAB	- Subcode Clock Decoder-A to Filter-B
SDAB	- Subcode Data Decoder-A to Filter-B
SWAB/SSM	- Subcode Word/Start-Stop Motor Signal
WS	- Word Select
WSAB	- Word Select Decoder-A to Filter-B
XIN	- Oscillator Signal in Decoder-A
XOUT	- Oscillator Signal out Decoder-A
XSYS	- Oscillator Signal

DECODER PANEL COMPONENT SIDE

1091	B1
1092	D3
1140	D10
1141	F5
1150	C8
1151	D8
1152	B9
1160	B10
1161	E10
1170	D10
1171	E6
1180	E6
1190	C8
1230	B4
2090	B1
2091	C1
2092	C1
2093	C2
2094	B2
2095	E3
2096	E2
2097	B1
2098	C1
2099	C5
2140	E6
2142	E7
2160	B8
2161	B9
2162	C9
2163	C9
2170	C10
2171	C9
2180	E6
2181	E9
2182	E6
2190	D6
2191	D6
2192	D4
2196	E6
2230	C4
2231	B4
2232	C4
2250	C3
2260	B7
2261	B8
2262	D8
2263	E9
2264	B7
2265	B8
2266	D8
2267	E9
2268	B8
2269	D9
2280	D4
3090	B1
3091	B1
3092	C2
3093	B2
3094	B1
3095	B1
3097	B1
3098	C1
3099	C1
3100	C1
3101	E2
3102	B2
3103	B2
3104	C2
3105	B2
3106	B2
3108	C5
3129	B3
3130	B3
3140	D7
3141	D9
3142	E6
3144	D6
3159	C7
3160	B8
3161	B9
3162	D9
3163	C9
3164	B8
3165	B9
3166	C9
3167	C9
3168	B5
3169	B5
3170	D9
3171	D9
3180	E6
3181	E6
3190	C6
3191	D4
3195	E6
3196	D6
3197	F4
3198	E4
3199	E4
3230	C4
3231	C4
3232	C3
3233	B4
3234	B4
3235	C4
3236	C4
3237	B3
3250	B2
3251	B2
3260	B7
3261	F8
3262	B6
3263	F8
3272	C7
3273	D8
3274	C8
3275	C7
3276	B7
3277	D9
3280	B3
3281	C5
3282	E4
3801	B2
3802	E1
3803	E5
3804	D9
3805	D6
3806	C4
3807	C6
3808	D5
3809	C6
3810	D1
3812	E8
3813	C7
3814	C8
3815	E5
3816	B3
3817	C4
3818	B3
3819	C2
3820	B2
3821	B2
3822	C2
3823	B1
3825	C2
3828	D3
3845	D3
4160	B8
4190	D5
4191	D5
4192	D5
4193	F4
4230	B4
4260	C7
4261	C8
4262	C7
4263	C7
4264	E8
5160	B9
6141	E6
6160	B5
6161	B5
6162	B8
7090	D1
7091	E2
7092	C1
7140	D6
7160	B8
7161	B9
7162	C9
7163	C9
7164	B5
7190	D5
7191	E4
7192	E4
7230	C4
7250	C2
7260	B7
7261	D8
7280	D4
9001	C3
9002	B6
9003	D4
9004	C3
9005	C9
9006	E7
9007	D3
9008	E9
9009	E4
9010	E5
9011	C5
9012	E3
9013	B8
9014	D4
9015	D8
9016	B5
9017	C7
9018	E7
9019	C1
9020	B2
9021	B4
9022	B4
9024	D4
9025	B5
9026	C1
9027	E1
9028	D1
9029	C3
9030	D4
9031	C3
9032	B2
9033	C2
9034	E5
9035	B2
9036	B2
9037	B1
9038	E5
9039	C1
9040	E2
9041	E1
9042	D1
9043	D1
9045	D2
9046	D2
9047	D2
9048	D2
9049	D2
9050	E4
9051	E7
9052	D6
9054	E6
9055	B9
9056	E4
9060	C8
9061	E5
9062	C9
9063	D7
9064	F9
9065	F9
9260	E8


1
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7
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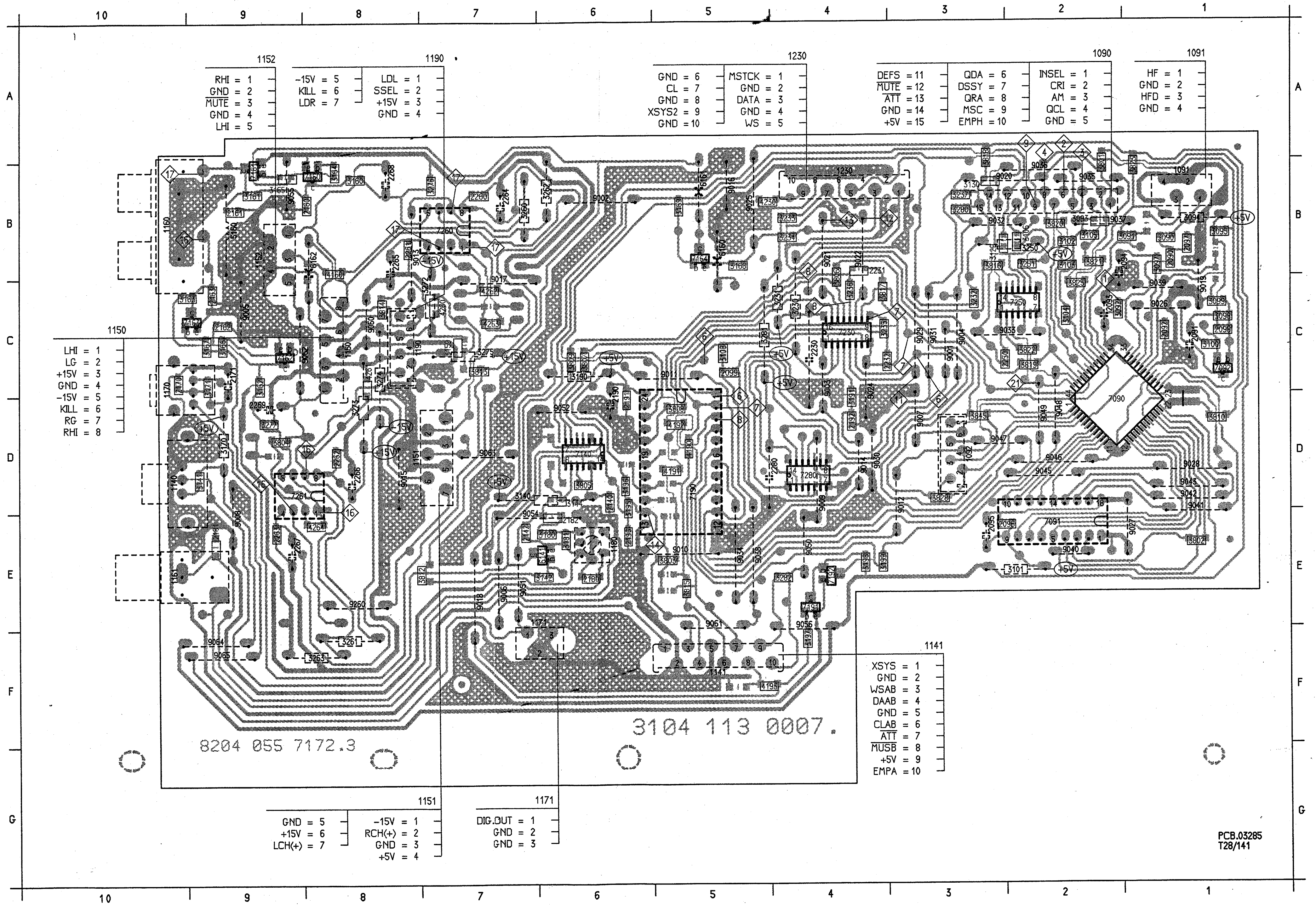
9
10
A
B
C
D
E
F
G
1091
1 = HF
2 = GND
3 = HFD
4 = GND
1090
1 = INSEL
2 = CRI
3 = AM
4 = QCL
5 = GND
6 = QDA
7 = DSSY
8 = QRA
9 = MSC
10 = EMPH
11 = DEFS
12 = $\overline{MUTE}$
13 = $\overline{ATT}$
14 = GND
15 = +5V
1230
1 = MSTCK
2 = GND
3 = DATA
4 = GND
5 = WS
6 = GND
7 = CL
8 = GND
9 = XSYS2
10 = GND
1190
1 = LDL
2 = SSEL
3 = +15V
4 = GND
5 = −15V
6 = KILL
7 = LDR
1152
1 = RHI
2 = GND
3 = $\overline{MUTE}$
4 = GND
5 = LHI
1150
1 = LHI
2 = LG
3 = +15V
4 = GND
5 = −15V
6 = KILL
7 = RG
8 = RHI
1141
1 = XSYS
2 = GND
3 = WSAB
4 = DAAD
5 = GND
6 = CLAB
7 = $\overline{ATT}$
8 = $\overline{MUSB}$
9 = +5V
10 = EMPA
1171
1 = DIG.OUT
2 = GND
3 = GND
1151
1 = −15V
2 = RCH(+)
3 = GND
4 = +5V
5 = GND
6 = +15V
7 = LCH(+)
+5V
-15V
+15V
7090
7091
7250
7230
7280
7190
7260
7261
1160
1161
1140
1170
PCB.03299
T28/141

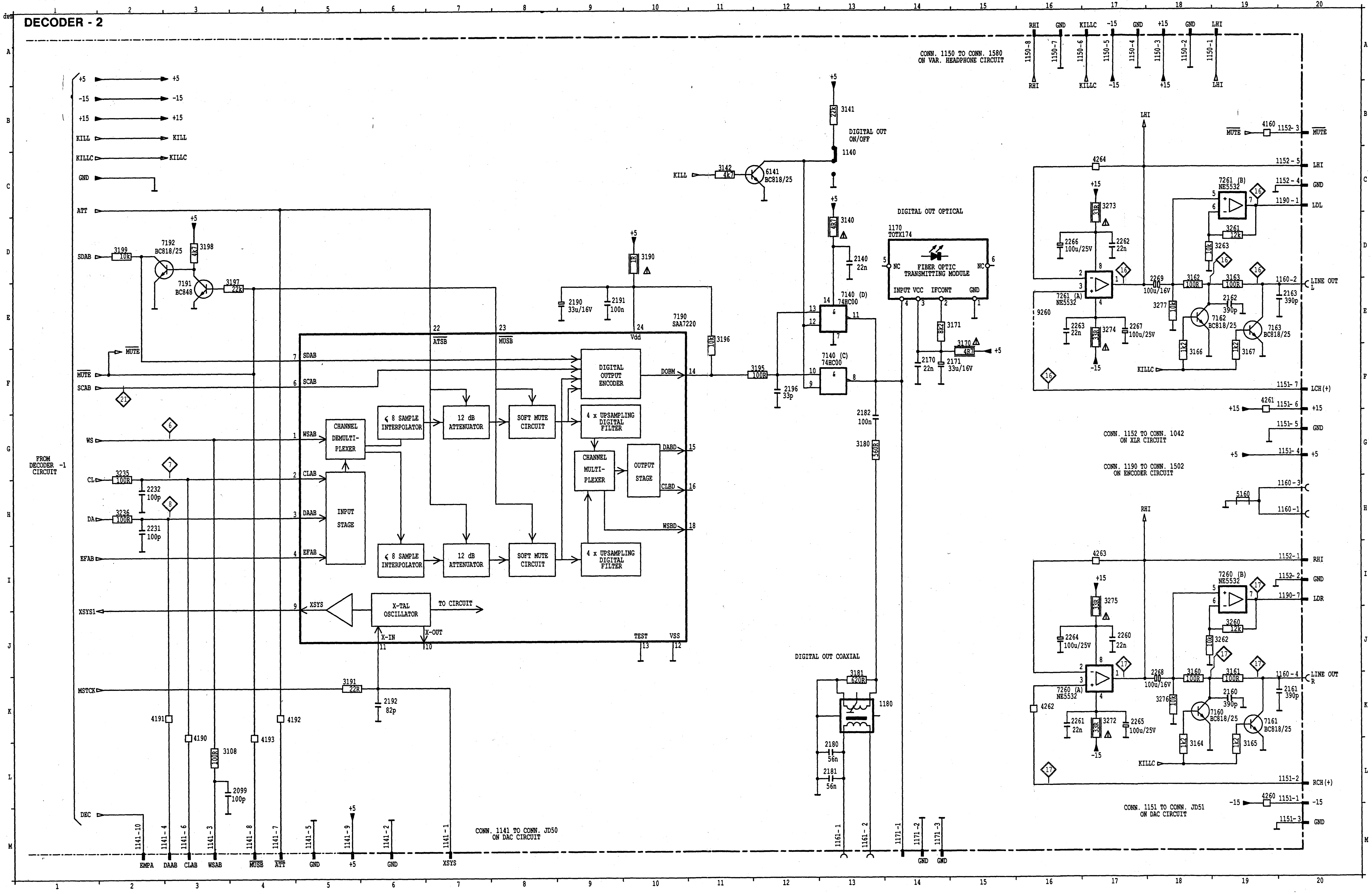
DECODER PANEL SOLDER SIDE

1091	B1
1092	D3
1140	D10
1141	F5
1150	C8
1151	D8
1152	B9
1160	B10
1161	E10
1170	D10
1171	E6
1180	E6
1190	C8
1230	B4
2090	B1
2091	C1
2092	C1
2093	C2
2094	B2
2095	E3
2096	E2
2097	B1
2098	C1
2099	C5
2140	E6
2142	E7
2160	B8
2161	B9
2162	C9
2163	C9
2170	C10
2171	C9
2180	E6
2181	E9
2182	E6
2190	D6
2191	D6
2192	D4
2196	E6
2230	C4
2231	B4
2232	C4
2250	C3
2260	B7
2261	B8
2262	D8
2263	E9
2264	B7
2265	B8
2266	D8
2267	E9
2268	B8
2269	D9
2280	D4
3090	B1
3091	B1
3092	C2
3093	B2
3094	B1
3095	B1
3097	B1
3098	C1
3099	C1
3100	C1
3101	E2
3102	B2
3103	B2
3104	C2
3105	B2
3106	B2
3108	C5
3129	B3
3130	B3
3140	D7
3141	D9
3142	E6
3144	D6
3159	C7
3160	B8
3161	B9
3162	D9
3163	C9
3164	B8
3165	B9
3166	C9
3167	C9
3168	B5
3169	B5
3170	D9
3171	D9
3180	E6
3181	E6
3190	C6
3191	D4
3195	E6
3196	D6
3197	F4
3198	E4
3199	E4
3230	C4
3231	C4
3232	C3
3233	B4
3234	B4
3235	C4
3236	C4
3237	B3
3250	B2
3251	B2
3260	B7
3261	F8
3262	B6
3263	F8
3272	C7
3273	D8
3274	C8
3275	C7
3276	B7
3277	D9
3280	B3
3281	C5
3282	E4
3801	B2
3802	E1
3803	E5
3804	D9
3805	D6
3806	C4
3807	C6
3808	D5
3809	C6
3810	D1
3812	E8
3813	C7
3814	C8
3815	E5
3816	B3
3817	C4
3818	B3
3819	C2
3820	B2
3821	B2
3822	C2
3823	B1
3825	C2
3828	D3
3845	D3
4160	B8
4190	D5
4191	D5
4192	D5
4193	F4
4230	B4
4260	C7
4261	C8
4262	C7
4263	C7
4264	E8
5160	B9
6141	E6
6160	B5
6161	B5
6162	B8
7090	D1
7091	E2
7092	C1
7140	D6
7160	B8
7161	B9
7162	C9
7163	C9
7164	B5
7190	D5
7191	E4
7192	E4
7230	C4
7250	C2
7260	B7
7261	D8
7280	D4
9001	C3
9002	B6
9003	D4
9004	C3
9005	C9
9006	E7
9007	D3
9008	E9
9009	E4
9010	E5
9011	C5
9012	E3
9013	B8
9014	D4
9015	D8
9016	B5
9017	C7
9018	E7
9019	C1
9020	B2
9021	B4
9022	B4
9024	D4
9025	B5
9026	C1
9027	E1
9028	D1
9029	C3
9030	D4
9031	C3
9032	B2
9033	C2
9034	E5
9035	B2
9036	B2
9037	B1
9038	E5
9039	C1
9040	E2
9041	E1
9042	D1
9043	D1
9045	D2
9046	D2
9047	D2
9048	D2
9049	D2
9050	E4
9051	E7
9052	D6
9054	E6
9055	B9
9056	E4
9060	C8
9061	E5
9062	C9
9063	D7
9064	F9
9065	F9
9260	E8


10
9
8
7
6
5
4
3
2
1
A
B
C
D
E
F
G
1152
RHI = 1
GND = 2
MUTE = 3
GND = 4
LHI = 5
1190
-15V = 5
KILL = 6
LDR = 7
LDL = 1
SSEL = 2
+15V = 3
GND = 4
1230
GND = 6
CL = 7
GND = 8
XSYS2 = 9
GND = 10
MSTCK = 1
GND = 2
DATA = 3
GND = 4
WS = 5
1090
DEFS = 11
MUTE = 12
ATT = 13
GND = 14
+5V = 15
QDA = 6
DSSY = 7
QRA = 8
MSC = 9
EMPH = 10
INSEL = 1
CRI = 2
AM = 3
QCL = 4
GND = 5
1091
HF = 1
GND = 2
HFD = 3
GND = 4
1150
LHI = 1
LG = 2
+15V = 3
GND = 4
-15V = 5
KILL = 6
RG = 7
RHI = 8
1141
XSYS = 1
GND = 2
WSAB = 3
DAAB = 4
GND = 5
CLAB = 6
ATT = 7
MUSB = 8
+5V = 9
EMPA = 10
1151
GND = 5
+15V = 6
LCH(+) = 7
-15V = 1
RCH(+) = 2
GND = 3
+5V = 4
1171
DIG.OUT = 1
GND = 2
GND = 3
8204 055 7172.3
3104 113 0007.
7090
7091
7250
7230
7280
7260
7261
+5V
+15V
-15V
PCB.03285
T28/141

DECODER CIRCUIT DIAGRAM

DECODER - 2


1
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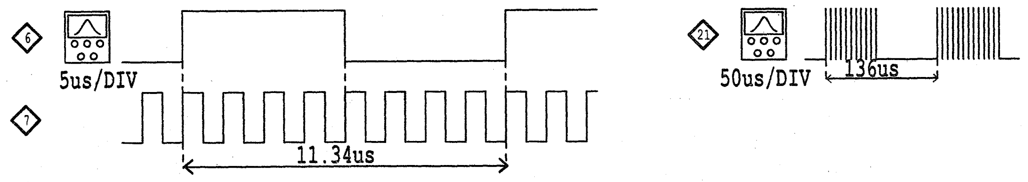
12
13
14
15
16
17
18
19
20
A
B
C
D
E
F
G
H
I
J
K
L
M
+5
-15
+15
KILL
KILLC
GND
ATT
SDAB
MUTE
SCAB
WS
CL
DA
EFAB
XSYS1
MSTCK
DEC
FROM DECODER -1 CIRCUIT
3199 10K
7192 BC818/25
3198 4K7
7191 BC848
3197 22K
3235 100R
2232 100p
3236 100R
2231 100p
4191
4190
3108 100R
2099 100p
4193
4192
3191 22K
2192 82p
2190 33u/16V
2191 100n
3190 1K
7190 SAA7220
22 ATSB
23 MUSB
24 Vdd
SDAB
SCAB
WSAB
CLAB
DAAB
EFAB
CHANNEL DEMULTI-PLEXER
INPUT STAGE
≤ 8 SAMPLE INTERPOLATOR
12 dB ATTENUATOR
SOFT MUTE CIRCUIT
DIGITAL OUTPUT ENCODER
4 x UPSAMPLING DIGITAL FILTER
CHANNEL MULTI-PLEXER
OUTPUT STAGE
DOBM
DABD
CLBD
WSBD
XSYS
X-TAL OSCILLATOR
TO CIRCUIT
X-IN
X-OUT
TEST
VSS
3196 10K
3195 100R
2196 33p
KILL
3142 4K7
6141 BC818/25
3141 22K
DIGITAL OUT ON/OFF
1140
3140 4R7
2140 22n
7140 (D) 74HC00
7140 (C) 74HC00
2182 100n
3180 560R
DIGITAL OUT OPTICAL
1170 TOTX174
FIBER OPTIC TRANSMITTING MODULE
NC
INPUT VCC
IFCONT
GND
3171 8K2
3170 4R7
2170 22n
2171 33u/16V
DIGITAL OUT COAXIAL
3181 620R
1180
2180 56n
2181 56n
1161-1
1161-2
1171-1
1171-2
1171-3
GND
CONN. 1141 TO CONN. JD50 ON DAC CIRCUIT
1141-10
1141-4
1141-6
1141-3
1141-8
1141-7
1141-5
1141-9
1141-2
1141-1
EMPA
DAAB
CLAB
WSAB
MUSB
ATT
XSYS
RHI
GND
KILLC
-15
+15
LHI
1150-8
1150-7
1150-6
1150-5
1150-4
1150-3
1150-2
1150-1
CONN. 1150 TO CONN. 1580 ON VAR. HEADPHONE CIRCUIT
4160
1152-3
4264
3273 33R
2266 100u/25V
2262 22n
7261 (B) NE5532
7261 (A) NE5532
3261 12K
3263 10K
2269 100u/16V
3162 100R
3163 100R
2162 390p
2163 390p
7162 BC818/25
7163 BC818/25
3277 10K
2263 22n
3274 33R
2267 100u/25V
3166 1K2
3167 1K2
9260
1152-5
1152-4
1190-1
LDL
1160-2
LINE OUT L
1151-7
LCH (+)
4261
1151-6
1151-5
1151-4
CONN. 1152 TO CONN. 1042 ON XLR CIRCUIT
CONN. 1190 TO CONN. 1502 ON ENCODER CIRCUIT
5160
1160-3
1160-1
4263
3275 33R
2264 100u/25V
2260 22n
7260 (B) NE5532
7260 (A) NE5532
3260 12K
3262 10K
2268 100u/16V
3160 100R
3161 100R
2160 390p
2161 390p
7160 BC818/25
7161 BC818/25
3276 10K
4262
2261 22n
3272 33R
2265 100u/25V
3164 1K2
3165 1K2
1152-1
1152-2
1190-7
LDR
1160-4
LINE OUT R
1151-2
RCH (+)
4260
1151-1
1151-3
CONN. 1151 TO CONN. JD51 ON DAC CIRCUIT
6
7
8
16
17
21

1140	C13
1141	M 2
1141	M 3
1141	M 3
1141	M 3
1141	M 4
1141	M 4
1141	M 5
1141	M 5
1141	M 6
1141	M 7
1150	A18
1150	A18
1150	A19
1150	A16
1150	A16
1150	A17
1150	A17
1150	A17
1151	F19
1151	G19
1151	F19
1151	L20
1151	L20
1151	M20
1151	G20
1152	C19
1152	C19
1152	B20
1152	I20
1152	I20
1160	K19
1160	E19
1160	H20
1160	H20
1161	M13
1161	M13
1170	D14
1171	M14
1171	M14
1171	M14
1180	K13
1190	C19
1190	I20
2099	L 4
2140	D13
2141	L 7
2160	K19
2161	K20
2162	E19
2163	E20
2170	F14
2171	F15
2180	L13
2181	L13
2182	G13
2190	E 9
2191	E 9
2192	K 6
2196	F12
2231	H 2
2232	H 2
2260	J17
2261	K16
2262	D17
2263	E16
2264	J16
2265	K17
2266	D16
2267	E17
2268	K18
2269	E18
3108	L 4
3140	D13
3141	B13
3142	C11
3143	L 7
3160	K18
3161	K19
3162	E18
3163	E19
3164	L18
3165	L19
3166	F18
3167	F19
3170	F15
3171	E15
3180	G13
3181	K13
3190	D10
3191	K 5
3195	F12
3196	E11
3197	E 4
3198	D 3
3199	D 2
3235	G 2
3236	H 2
3260	J19
3261	D19
3262	J19
3263	D19
3272	K17
3273	C17
3274	E17
3275	I17
3276	K18
3277	E18
4160	B19
4190	K 3
4191	K 2
4192	K 4
4193	K 4
4260	L19
4261	F19
4262	K16
4263	I17
4264	C17
5160	H19
6141	C12
7140	J 6
7140	F13
7140	E13
7160	K18
7161	K19
7162	E19
7163	E19
7190	E10
7191	E 3
7192	D 3
7260	I19
7260	K16
7261	C19
7261	E16
9260	E16



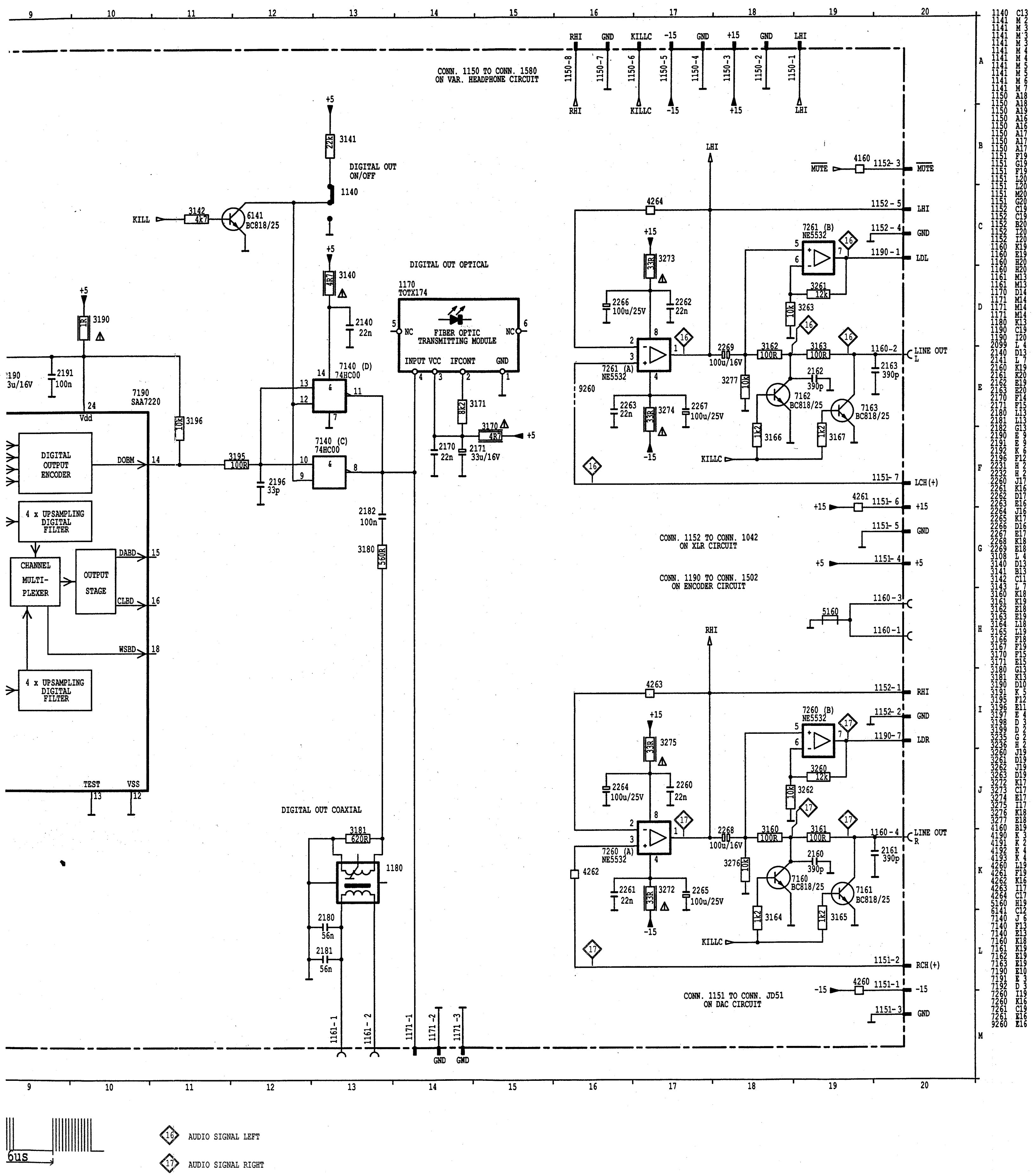
⑯ AUDIO SIGNAL LEFT

⑰ AUDIO SIGNAL RIGHT

⑧ ACTIVITY

3104 118 00071 R-B

3104 118 00071 S-B
9141

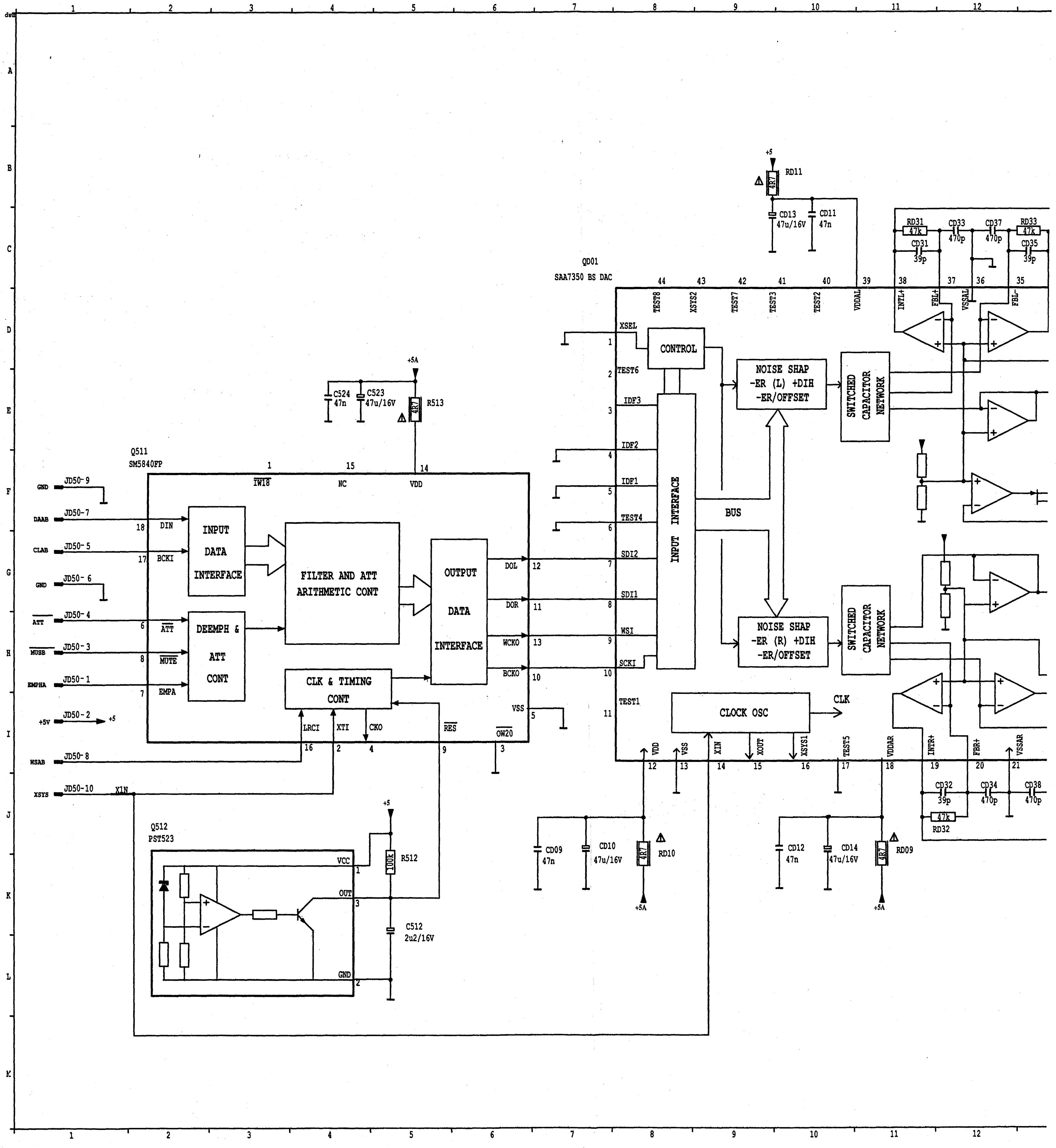

CONN. 1150 TO CONN. 1580 ON VAR. HEADPHONE CIRCUIT
DIGITAL OUT ON/OFF
DIGITAL OUT OPTICAL
FIBER OPTIC TRANSMITTING MODULE
1170 TOTX174
7190 SAA7220
DIGITAL OUTPUT ENCODER
4 x UPSAMPLING DIGITAL FILTER
CHANNEL MULTI-PLEXER
OUTPUT STAGE
DIGITAL OUT COAXIAL
7261 (A) NE5532
7261 (B) NE5532
7260 (A) NE5532
7260 (B) NE5532
7140 (C) 74HC00
7140 (D) 74HC00
6141 BC818/25
LINE OUT L
LINE OUT R
CONN. 1152 TO CONN. 1042 ON XLR CIRCUIT
CONN. 1190 TO CONN. 1502 ON ENCODER CIRCUIT
CONN. 1151 TO CONN. JD51 ON DAC CIRCUIT
16 AUDIO SIGNAL LEFT
17 AUDIO SIGNAL RIGHT

DECODER-2

ATSB	- Attenuation of Audio Level in Search Position
ATT	- Attenuation
CL	- Clock Signal
CLAB	- Clock Signal Decoder-A to Filter-B
CLBD	- Clock Signal Filter-B to DAC
DA	- Data Signal
DAAB	- Data Signal Decoder-A to Filter-B
DABD	- Data Signal Filter-B to DAC
DEC	- Deemphasis Control
DOBM	- Digital Out Signal
EFAB	- Error Flag Decoder-A to Filter-B
MUSB	- Soft Mute Signal
SCAB	- Subcode Clock Decoder-A to Filter-B
SDAB	- Subcode Data Decoder-A to Filter-B
WS	- Word Select
WSAB	- Word Select Decoder-A to Filter-B
WSBD	- Word Select Filter-B to DAC
X-IN	- Oscillator Signal in Decoder-A
X-OUT	- Oscillator Signal out Decoder-A
XSYS	- Oscillator Signal

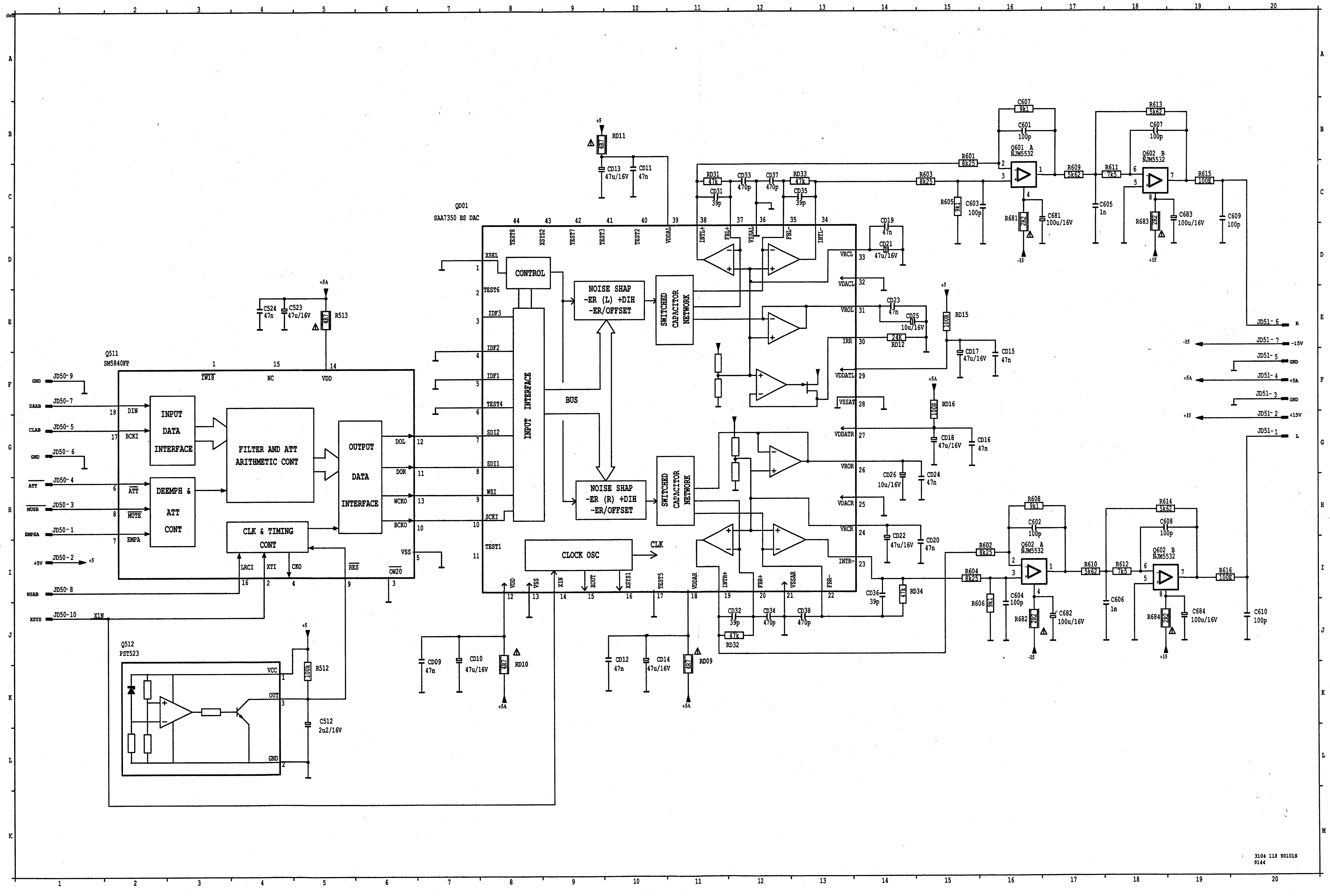
BS DAC CIRCUIT DIAGRAM

C512	K 5
C523	E 5
C524	E 4
C601	B16
C602	H16
C603	C15
C604	I16
C605	C18
C606	J18
C607	B16
C607	B18
C608	H19
C609	C20
C610	J20
C681	C17
C682	J17
C683	C19
C684	J19
CD09	J 7
CD10	J 7
CD11	C10
CD12	J10
CD13	C10
CD14	J10
CD15	F16
CD16	G16
CD17	F15
CD18	G15
CD19	C14
CD20	I15
CD21	D14
CD22	I14
CD23	E14
CD24	H15
CD25	E14
CD26	H14
CD31	C11
CD32	J12
CD33	C12
CD34	J12
CD35	C13
CD36	I14
CD37	C12
CD38	J13
JD50	I 1
JD50	J 1
JD50	H 1
JD50	G 1
JD50	F 1
JD50	F 1
JD50	H 1
JD50	H 1
JD50	I 1
JD50	G 1
JD51	F20
JD51	E20
JD51	F20
JD51	E20
JD51	G20
JD51	G20
JD51	F20
Q511	F 2
Q512	J 2
Q601	B16
Q602	I16
Q602	B18
Q602	I18
QD01	C 7
R512	K 5
R513	E 5
R601	B15
R602	I16
R603	C15
R604	I15
R605	C15
R606	J15
R608	H
R609	C
R610	I
R611	C


1 2 3 4 5 6 7 8 9 10 11 12
A B C D E F G H I J K L K
+5
RD11
4R7
CD13
47u/16V
CD11
47n
RD31
47k
CD33
470p
CD37
470p
RD33
47k
CD31
39p
CD35
39p
QD01
SAA7350 BS DAC
44 43 42 41 40 39 38 37 36 35
TEST8 XSYS2 TEST7 TEST3 TEST2 VDDAL INTL+ FBL+ VSSAL FBL-
XSEL
TEST6
IDF3
IDF2
IDF1
TEST4
SDI2
SDI1
WSI
SCKI
TEST1
CONTROL
NOISE SHAP
-ER (L) +DIH
-ER/OFFSET
SWITCHED CAPACITOR NETWORK
INPUT INTERFACE
BUS
NOISE SHAP
-ER (R) +DIH
-ER/OFFSET
CLOCK OSC
CLK
VDD VSS XIN XOUT XSYS1 TEST5 VDDAR INTR+ FBR+ VSSAR
12 13 14 15 16 17 18 19 20 21
+5A
C524
47n
C523
47u/16V
R513
4R7
Q511
SM5840FP
1 15 14
IW18 NC VDD
DIN
BCKI
ATT
MUTE
EMPA
INPUT DATA INTERFACE
FILTER AND ATT ARITHMETIC CONT
OUTPUT DATA INTERFACE
DEEMPH & ATT CONT
CLK & TIMING CONT
DOL
DOR
WCKO
BCKO
VSS
LRCI XTI CKO RES OW20
16 2 4 9 3
GND JD50-9
DAAB JD50-7
CLAB JD50-5
GND JD50-6
ATT JD50-4
MUSB JD50-3
EMPHA JD50-1
+5V JD50-2 +5
MSAB JD50-8
XSYS JD50-10
XIN
Q512
PST523
VCC
OUT
GND
+5
100K
R512
C512
2u2/16V
CD09
47n
CD10
47u/16V
4R7
RD10
CD12
47n
CD14
47u/16V
4R7
RD09
CD32
39p
CD34
470p
CD38
470p
47k
RD32

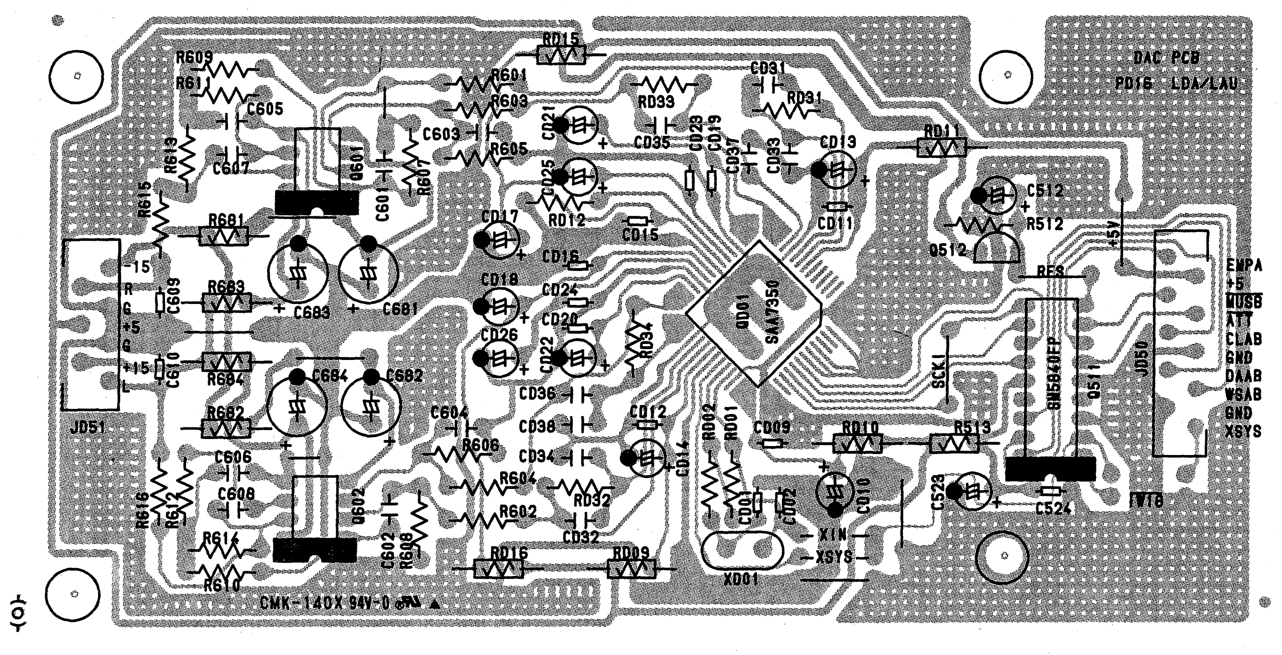
BS DAC CIRCUIT DIAGRAM

C512	K 5
C523	E 5
C524	E 4
C601	B16
C602	H16
C603	C15
C604	I16
C605	C18
C606	J18
C607	B16
C607	B18
C608	H19
C609	C20
C610	J20
C681	C17
C682	J17
C683	C19
C684	J19
CD09	J 7
CD10	J 7
CD11	C10
CD12	J10
CD13	C10
CD14	J10
CD15	F16
CD16	G16
CD17	F15
CD18	G15
CD19	C14
CD20	I15
CD21	D14
CD22	I14
CD23	E14
CD24	H15
CD25	E14
CD26	H14
CD31	C11
CD32	J12
CD33	C12
CD34	J12
CD35	C13
CD36	I14
CD37	C12
CD38	J13
JD50	I 1
JD50	J 1
JD50	H 1
JD50	G 1
JD50	F 1
JD50	F 1
JD50	H 1
JD50	H 1
JD50	I 1
JD50	G 1
JD51	F20
JD51	E20
JD51	F20
JD51	E20
JD51	G20
JD51	G20
JD51	F20
Q511	F 2
Q512	J 2
Q601	B16
Q602	I16
Q602	B18
Q602	I18
QD01	C 7
R512	K 5
R513	E 5
R601	B15
R602	I16
R603	C15
R604	I15
R605	C15
R606	J15
R608	H16
R609	C17
R610	I17
R611	C18
R612	I18
R613	B18
R614	H18
R615	C19
R616	I19
R681	C16
R682	J16
R683	D18
R684	J18
RD09	K11
RD10	K 8
RD11	B10
RD12	E14
RD15	E15
RD16	F15
RD31	C11
RD32	J12
RD33	C13
RD34	I15
X1N	J 1

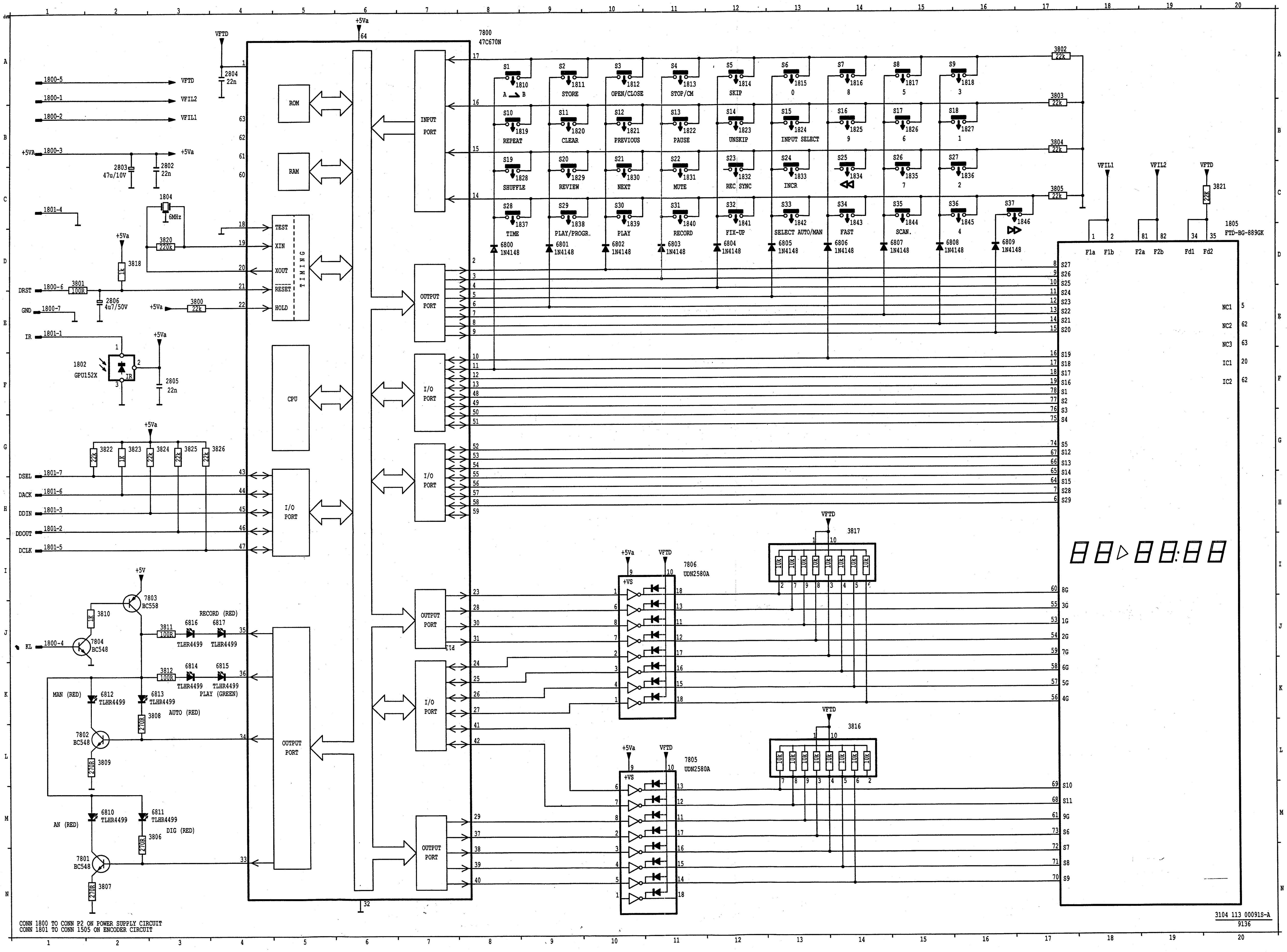


QD01
SAA7350 BS DAC
CONTROL
NOISE SHAP -ER (L) +DIH -ER/OFFSET
NOISE SHAP -ER (R) +DIH -ER/OFFSET
SWITCHED CAPACITOR NETWORK
INPUT INTERFACE
BUS
CLOCK OSC
CLK
XSEL
TEST6
IDF3
IDF2
IDF1
TEST4
SDI2
SDI1
WSI
SCKI
TEST1
TEST8
XSYS2
TEST7
TEST3
TEST2
VDDAL
INTL+
FBL+
VSSAL
FBL-
INTL-
VRCL
VDACL
VROL
IRR
VDDATL
VSSAT
VDDATR
VROR
VDACR
VRCR
INTR-
VDD
VSS
XIN
XOUT
XSYS1
TEST5
VDDAR
INTR+
FBR+
VSSAR
FBR-
Q511
SM5840FP
INPUT DATA INTERFACE
FILTER AND ATT ARITHMETIC CONT
OUTPUT DATA INTERFACE
DEEMPH & ATT CONT
CLK & TIMING CONT
IW18
NC
DIN
BCKI
ATT
MUTE
EMPA
LRCI
XTI
CKO
RES
OW20
DOL
DOR
WCKO
BCKO
Q512
PST523
VCC
OUT
GND
R512
100k
C512
2u2/16V
JD50-9
GND
JD50-7
DAAB
JD50-5
CLAB
JD50-6
GND
JD50-4
ATT
JD50-3
MUSB
JD50-1
EMPHA
JD50-2
+5V
JD50-8
WSAB
JD50-10
XSYS
X1N
C524 47n
C523 47u/16V
R513 4R7
+5A
RD11 4R7
CD13 47u/16V
CD11 47n
RD31 47k
CD31 39p
CD33 470p
CD37 470p
RD33 47k
CD35 39p
CD19 47n
CD21 47u/16V
CD23 47n
CD25 10u/16V
RD12 24K
RD15 100R
CD17 47u/16V
CD15 47n
RD16 100R
CD18 47u/16V
CD16 47n
CD26 10u/16V
CD24 47n
CD22 47u/16V
CD20 47n
CD36 39p
RD34 47k
CD32 39p
CD34 470p
CD38 470p
RD32 47k
CD09 47n
CD10 47u/16V
RD10 4R7
CD12 47n
CD14 47u/16V
RD09 4R7
R601 8k25
R603 8k25
R605 9k1
C603 100p
C608 9k1
C601 100p
Q601 A NJM5532
R609 5k62
R611 7k5
C605 1n
R613 5k62
C607 100p
Q602 B NJM5532
R615 100E
C609 100p
R681 2R2
C681 100u/16V
R683 2R2
C683 100u/16V
R602 8k25
R604 8k25
R606 9k1
C604 100p
R608 9k1
C602 100p
Q602 A NJM5532
R610 5k62
R612 7k5
C606 1n
R614 5k62
C608 100p
Q602 B NJM5532
R616 100E
C610 100p
R682 2R2
C682 100u/16V
R684 2R2
C684 100u/16V
-15
+15
JD51-6 R
JD51-7 -15V
JD51-5 GND
JD51-4 +5A
JD51-3 GND
JD51-2 +15V
JD51-1 L
3104 118 90101S
9144

BS DAC PANEL


DAC PCB
PD16 LDA/LAU
R609
R611
C605
R613
C607
R615
Q601
C601
R607
C603
R601
R603
R605
RD15
RD33
CD35
CD21
CD25
RD12
CD23
CD19
CD31
RD31
CD37
CD33
CD13
CD11
RD11
C512
R512
Q512
+5V
CD15
CD17
CD16
CD18
CD24
CD20
CD26
CD22
RD34
QD01
SAA7350
R681
R683
R684
R682
C683
C681
C684
C682
-15
R
G
+5
G
+15
L
C609
C610
JD51
C604
R606
CD36
CD38
CD34
CD12
CD14
RD02
RD01
CD09
RD10
R513
RFS
SCKI
QM5840FP
Q511
JD50
EMPA
+5
MUSB
ATT
CLAB
GND
DAAB
WSAB
GND
XSYS
C606
C608
Q602
C602
R608
R616
R612
R614
R610
R604
R602
RD32
CD32
RD16
RD09
CD01
CD02
CD10
C523
C524
TW18
XIN
XSYS
XD01
CMK-140X 94V-0 ▲

CONTROL AND DISPLAY CIRCUIT DIAGRAM

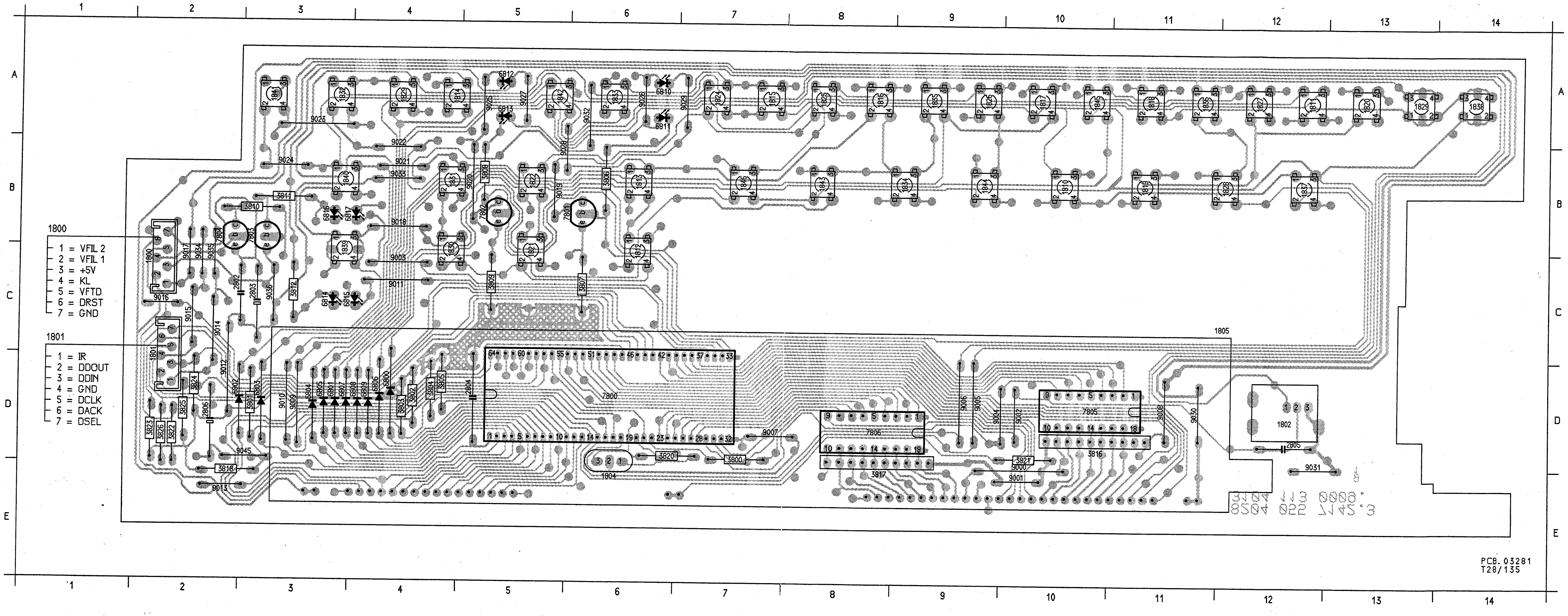

1800-5 VFTD
1800-1 VFIL2
1800-2 VFIL1
+5VA 1800-3 +5Va
2803 47u/10V
2802 22n
2804 22n
VFTD
1801-4
1804 6MHz
3820 220K
3818 1K
+5Va
DRST 1800-6 3801 100R
2806 4u7/50V
GND 1800-7
3800 22K
IR 1801-1
1802 GPU152X
2805 22n
3822 22K
3823 1K
3824 22K
3825 22K
3826 22K
DSEL 1801-7
DACK 1801-6
DDIN 1801-3
DDOUT 1801-2
DCLK 1801-5
KL 1800-4
+5V
7803 BC558
7804 BC548
3810 1K
3811 100R
3812 100R
6816 6817 TLHR4499 TLHR4499 RECORD (RED)
6814 6815 TLHR4499 TLHR4499 PLAY (GREEN)
MAN (RED) 6812 TLHR4499
6813 TLHR4499
3808 270R AUTO (RED)
7802 BC548
3809 270R
AN (RED) 6810 TLHR4499
6811 TLHR4499
DIG (RED) 3806 270R
7801 BC548
3807 270R
CONN 1800 TO CONN P2 ON POWER SUPPLY CIRCUIT
CONN 1801 TO CONN 1505 ON ENCODER CIRCUIT
7800 47C670N
+5Va 64
ROM
RAM
CPU
TEST
XIN
XOUT
RESET
HOLD
TIMING
I/O PORT
INPUT PORT
OUTPUT PORT
I/O PORT
I/O PORT
OUTPUT PORT
I/O PORT
OUTPUT PORT
OUTPUT PORT
32
S1 1810 A B
S2 1811 STORE
S3 1812 OPEN/CLOSE
S4 1813 STOP/CM
S5 1814 SKIP
S6 1815 0
S7 1816 8
S8 1817 5
S9 1818 3
S10 1819 REPEAT
S11 1820 CLEAR
S12 1821 PREVIOUS
S13 1822 PAUSE
S14 1823 UNSKIP
S15 1824 INPUT SELECT
S16 1825 9
S17 1826 6
S18 1827 1
S19 1828 SHUFFLE
S20 1829 REVIEW
S21 1830 NEXT
S22 1831 MUTE
S23 1832 REC SYNC
S24 1833 INCR
S25 1834 ◁◁
S26 1835 7
S27 1836 2
S28 1837 TIME
S29 1838 PLAY/PROGR.
S30 1839 PLAY
S31 1840 RECORD
S32 1841 FIX-UP
S33 1842 SELECT AUTO/MAN
S34 1843 FAST
S35 1844 SCAN.
S36 1845 4
S37 1846 ▷▷
6800 1N4148
6801 1N4148
6802 1N4148
6803 1N4148
6804 1N4148
6805 1N4148
6806 1N4148
6807 1N4148
6808 1N4148
6809 1N4148
3802 22k
3803 22k
3804 22k
3805 22k
VFIL1
VFIL2
VFTD
3821 22K
1805 FTD-BG-889GK
F1a F1b F2a F2b Fd1 Fd2
NC1 NC2 NC3 IC1 IC2
S27 S26 S25 S24 S23 S22 S21 S20 S19 S18 S17 S16 S1 S2 S3 S4 S5 S12 S13 S14 S15 S28 S29
8G 3G 1G 2G 7G 6G 5G 4G
S10 S11 9G S6 S7 S8 S9
88▷88:88
+5Va VFTD
7806 UDN2580A
+VS
VFTD
3817 10K
7805 UDN2580A
3816 10K
3104 113 00091S-A
9136

1800	E 1
1800	J 1
1800	D 1
1800	B 1
1800	B 1
1800	A 1
1800	A 1
1801	I 1
1801	H 1
1801	H 1
1801	H 1
1801	G 1
1801	E 1
1801	C 1
1802	F 2
1804	C 3
1805	D20
1810	A 8
1811	A 9
1812	A10
1813	A11
1814	A12
1815	A13
1816	A14
1817	A15
1818	A16
1819	B 8
1820	B 9
1821	B10
1822	B11
1823	B12
1824	B13
1825	B14
1826	B15
1827	B16
1828	C 8
1829	C 9
1830	C10
1831	C11
1832	C12
1833	C13
1834	C14
1835	C15
1836	C16
1837	C 8
1838	C 9
1839	C10
1840	C11
1841	C12
1842	C13
1843	C14
1844	C15
1845	C16
1846	C17
2802	C 3
2803	C 2
2804	A 4
2805	F 3
2806	E 2
3800	E 3
3801	D 1
3802	A17
3803	A17
3804	B17
3805	C17
3806	M 3
3807	N 2
3808	K 3
3809	L 2
3810	J 2
3811	J 3
3812	K 3
3816	L14
3817	H14
3818	D 2
3820	D 3
3821	C20
3822	G 2
3823	G 2
3824	G 3
3825	G 3
3826	G 4
6800	D 8
6801	D 9
6802	D10
6803	D11
6804	D12
6805	D13
6806	D14
6807	D15
6808	D16
6809	D16
6810	M 2
6811	M 3
6812	K 2
6813	K 3
6814	K 3
6815	K 4
6816	J 3
6817	J 4
7800	A 8
7801	N 2
7802	L 2
7803	I 2
7804	J 2
7805	L11
7806	I11

MZ 3097

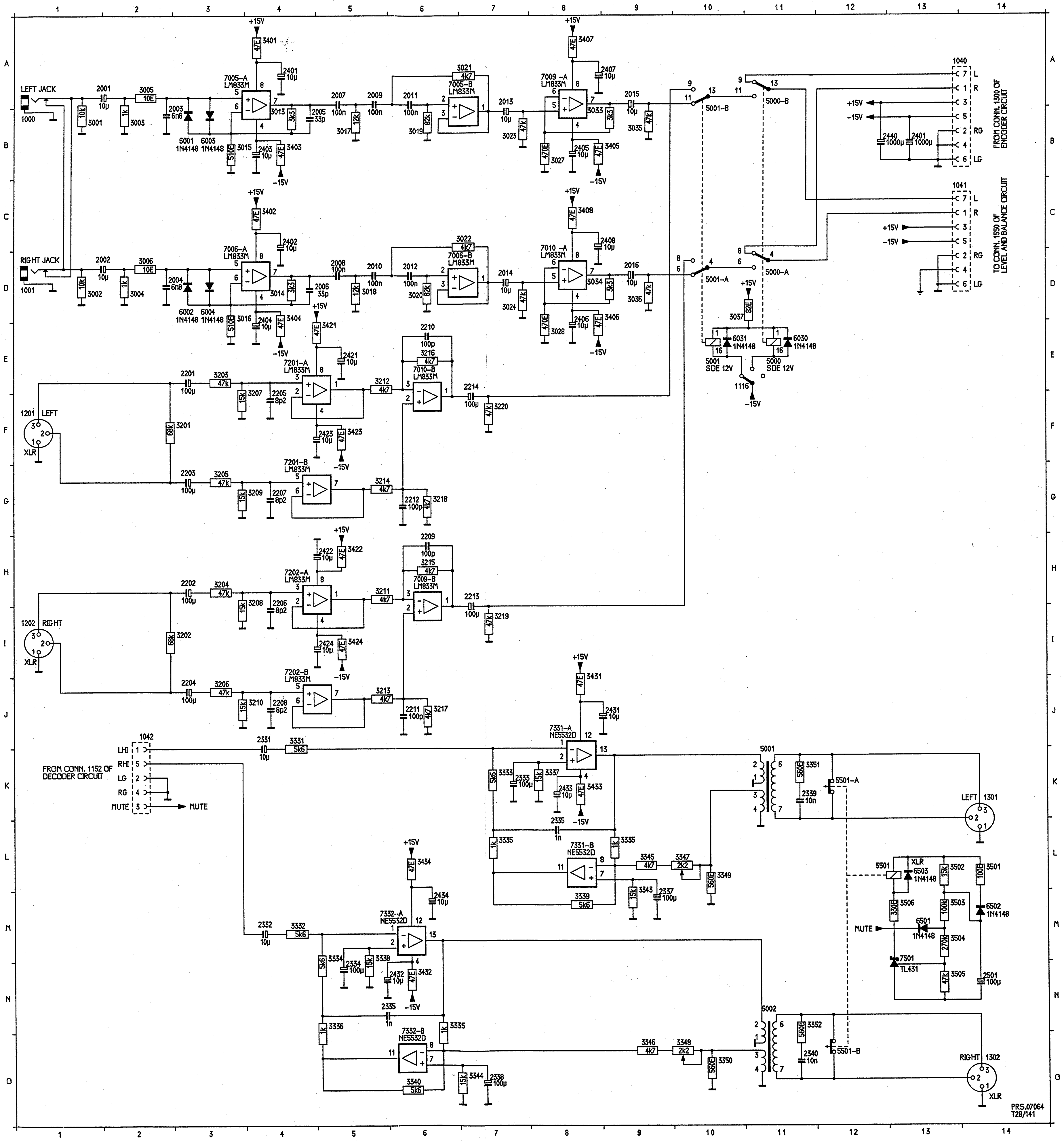
CONTROL AND DISPLAY PANEL

1800	C2
1801	D2
1802	D12
1804	E6
1805	C11
1810	B10
1811	A12
1812	C6
1813	B6
1814	A4
1815	A7
1816	A8
1817	A10
1818	A11
1819	B11
1820	A13
1821	C5
1822	B5
1824	A7
1825	A8
1826	A9
1827	A12
1828	B12
1829	A13
1829	A4
1830	C4
1831	B4
1832	A3
1833	A6
1834	B9
1835	A9
1836	A11
1837	B12
1838	A14
1839	C3
1840	B3
1841	A3
1842	A5
1843	B8
1844	B9
1845	A10
1846	B7
2802	C2
2803	C3
2804	D5
2805	D12
2806	D2
3800	D7
3801	D3
3802	D4
3803	D4
3804	D4
3805	D4
3806	B6
3807	C6
3808	B5
3809	C5
3810	B3
3811	B3
3812	C3
3816	D10
3817	E8
3818	E2
3820	D6
3821	D10
3822	D2
3823	D2
3824	D2
3825	D2
3826	D2
6800	D4
6801	D3
6802	D2
6803	D3
6804	D3
6805	D3
6806	D4
6807	D3
6808	D4
6809	D4
6810	A6
6811	A6
6812	A5
6813	A5
6814	C3
6815	C3
6816	B3
6817	B3
7800	D6
7801	B6
7802	B5
7803	B3
7804	B2
7805	D10
7806	D8
9000	D10
9001	E10
9002	D10
9003	C4
9004	D9
9005	D9
9006	D9
9007	D7
9008	D11
9009	D3
9010	D3
9011	C4
9012	D2
9013	E2
9014	C2
9015	C2
9016	C2
9017	C2
9018	B4
9019	B5
9020	B5
9021	B4
9022	B4
9023	A3
9024	B3
9025	A5
9026	A6
9027	A5
9028	B5
9029	A7
9030	D11
9031	D12
9032	A6
9033	B4
9034	C2
9035	C2
9036	C3
9045	D2


1800
1 = VFIL 2
2 = VFIL 1
3 = +5V
4 = KL
5 = VFTD
6 = DRST
7 = GND
1801
1 = IR
2 = DDOUT
3 = DDIN
4 = GND
5 = DCLK
6 = DACK
7 = DSEL
7800
7805
7806
1802
1804
1805
PCB. 03281
T28/135

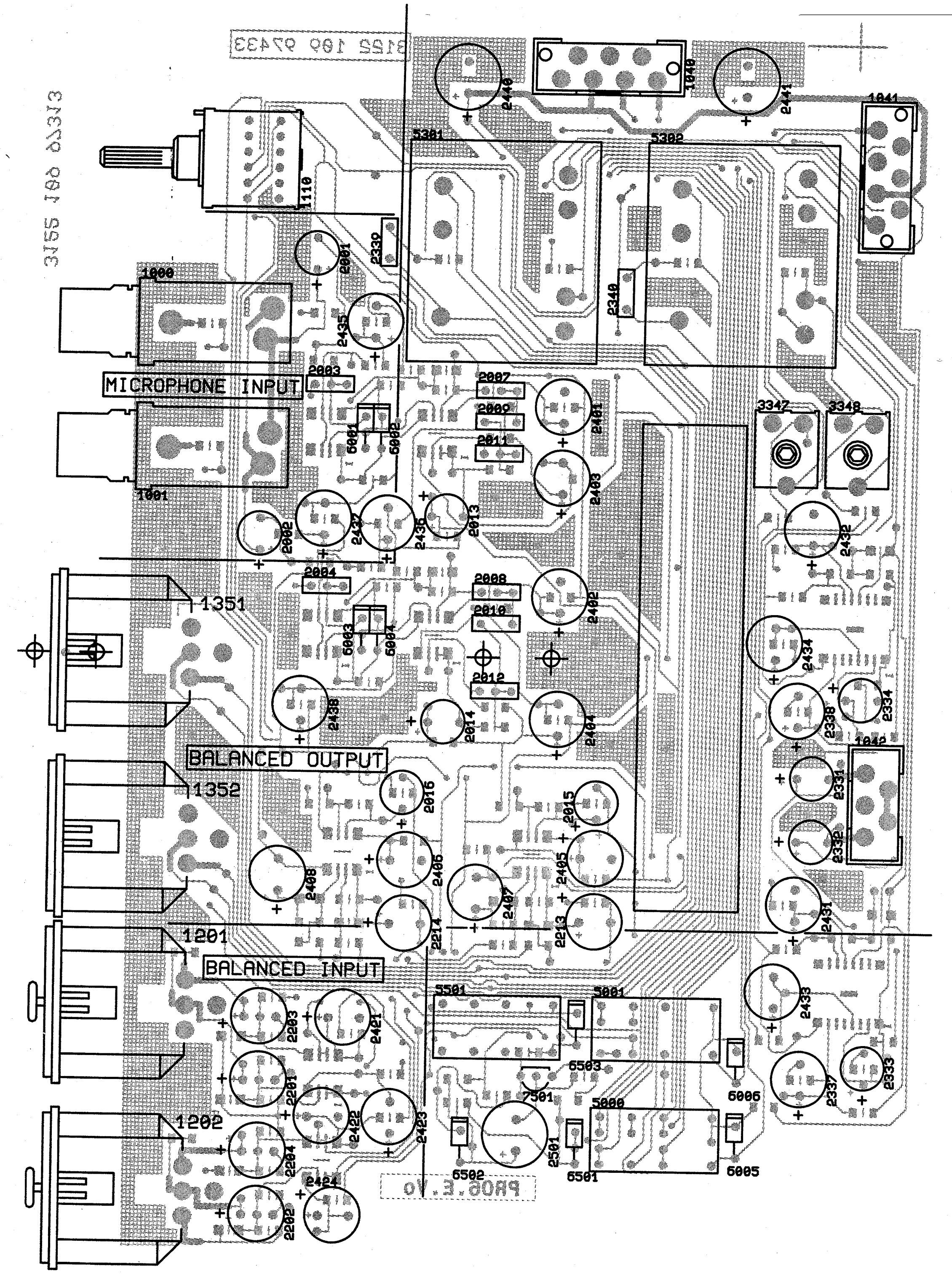
MZ 3098

XLR CIRCUIT DIAGRAM

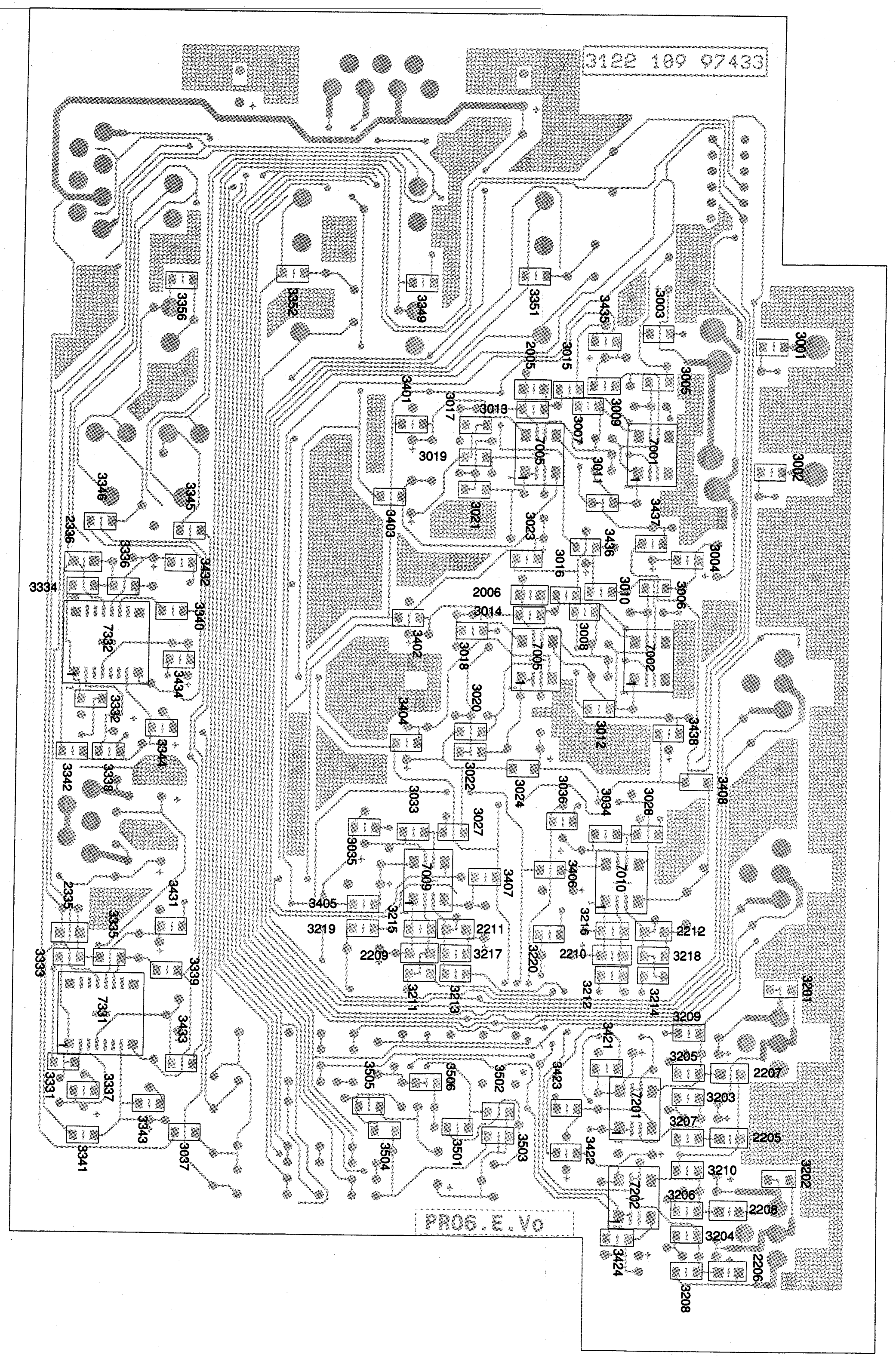

LEFT JACK
1000
RIGHT JACK
1001
7005-A LM833M
7005-B LM833M
7006-A LM833M
7006-B LM833M
7009-A LM833M
7010-A LM833M
7201-A LM833M
7201-B LM833M
7202-A LM833M
7202-B LM833M
7010-B LM833M
7009-B LM833M
7331-A NE5532D
7331-B NE5532D
7332-A NE5532D
7332-B NE5532D
5001-B
5000-B
5001-A
5000-A
5001 SDE 12V
5000 SDE 12V
1116
1040
FROM CONN. 1300 OF ENCODER CIRCUIT
1041
TO CONN. 1550 OF LEVEL AND BALANCE CIRCUIT
1201 LEFT
XLR
1202 RIGHT
XLR
1042
FROM CONN. 1152 OF DECODER CIRCUIT
LHI
RHI
LG
RG
MUTE
MUTE
+15V
-15V
5001
5002
5501-A
5501-B
5501
LEFT 1301
RIGHT 1302
XLR
7501 TL431
6501 1N4148
6502 1N4148
6503 1N4148
PRS.07064
T28/141
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I J K L M N O

1000	B1
1001	D1
1040	A13
1041	C13
1042	J2
1116	E10
1201	F1
1202	I1
1301	K14
1302	O14
2001	A2
2002	D2
2003	B2
2004	D2
2005	B4
2006	D5
2007	A5
2008	D5
2009	A5
2010	D5
2011	A6
2012	D6
2013	A7
2014	D7
2015	A9
2016	D9
2201	E3
2202	H3
2203	G3
2204	J3
2205	F4
2206	H4
2207	G4
2208	J4
2209	H6
2210	E6
2211	J6
2212	G6
2213	H7
2214	E7
2331	J4
2332	M4
2333	K7
2334	N5
2335	L8
2335	N5
2337	M9
2338	O7
2339	K11
2340	O11
2401	A4
2401	B13
2402	C4
2403	B4
2404	E4
2405	B8
2406	E8
2407	A9
2408	C9
2421	E5
2422	H5
2423	F5
2424	I5
2431	J9
2432	N6
2433	K8
2434	M6
2440	B12
2501	N14
3001	B1
3002	D1
3003	B2
3004	D2
3005	A2
3006	D2
3013	B4
3014	D4
3015	B3
3016	D3
3017	B5
3018	D5
3019	B6
3020	D6
3021	A7
3022	C7
3023	B7
3024	D7
3027	B8
3028	E8
3033	B8
3034	D8
3035	B9
3036	D9
3037	D10
3201	F3
3202	I3
3203	E3
3204	H3
3205	G3
3206	J3
3207	F4
3208	H4
3209	G4
3210	J4
3211	H5
3212	E5
3213	J5
3214	G5
3215	H6
3216	E6
3217	J6
3218	G6
3219	I7
3220	F7
3331	J4
3332	M4
3333	K7
3334	M5
3335	L7
3335	L9
3335	N6
3336	N5
3337	K8
3338	M5
3339	M8
3340	O6
3343	M9
3344	O7
3345	L9
3346	O9
3347	L10
3348	O10
3349	L10
3350	O10
3351	K11
3352	N11
3401	A4
3402	C4
3403	B4
3404	D4
3405	B9
3406	D9
3407	A8
3408	C8
3421	E5
3422	H5
3423	F5
3424	I5
3431	J8
3432	N6
3433	K8
3434	L6
3501	L14
3502	L13
3503	M13
3504	M13
3505	N13
3506	M13
5000	A11
5000	D11
5000	E11
5001	B10
5001	D10
5001	E10
5001	K11
5002	N11
5501	K12
5501	L12
5501	O12
6001	B3
6002	D3
6003	B3
6004	D3
6030	E11
6031	E10
6501	M13
6502	M14
6503	L13
7005	A3
7005	A6
7006	D3
7006	D6
7009	A8
7009	H6
7010	D8
7010	E6
7201	E4
7201	G4
7202	H4
7202	I4
7331	J8
7331	L8
7332	M5
7332	O6
7501	N13

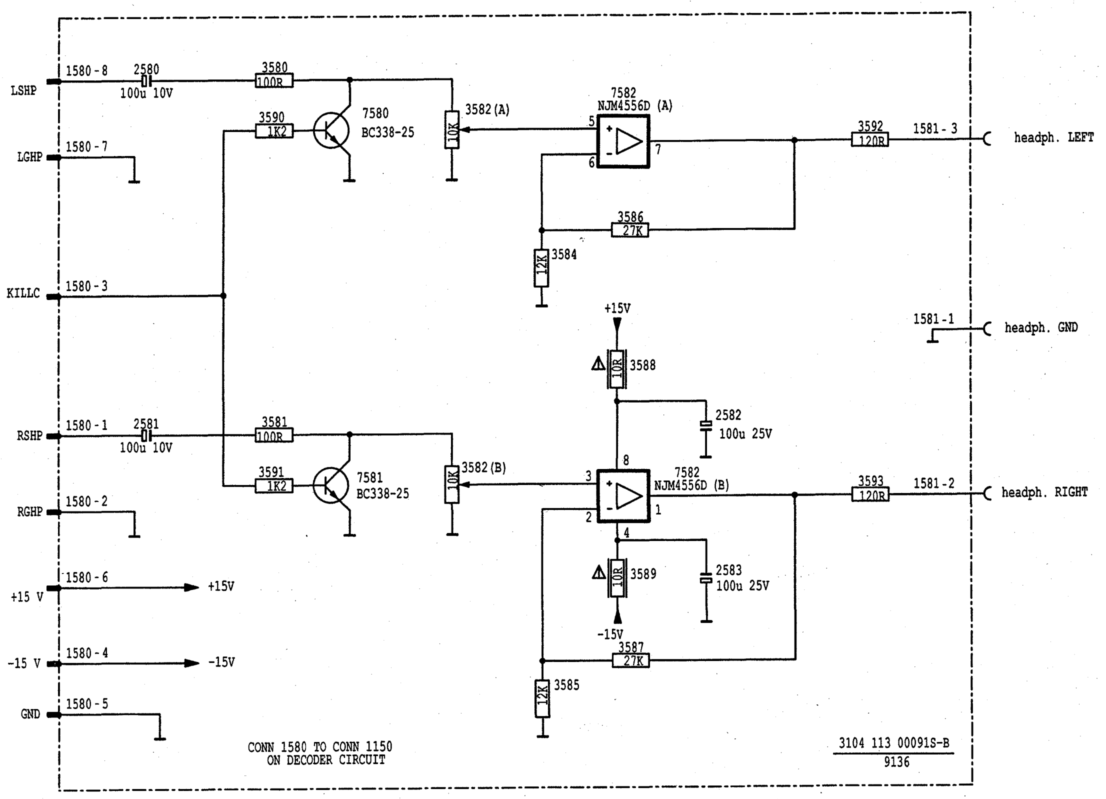
XLR PANEL COMPONENT SIDE


3122 109 97433
MICROPHONE INPUT
BALANCED OUTPUT
BALANCED INPUT
1000
1001
1040
1041
1042
1110
1351
1352
1201
1202
5301
5302
5501
5001
5000
3347
3348
7501
6501
6502
6503
6005
6006
PROG.E.Vo

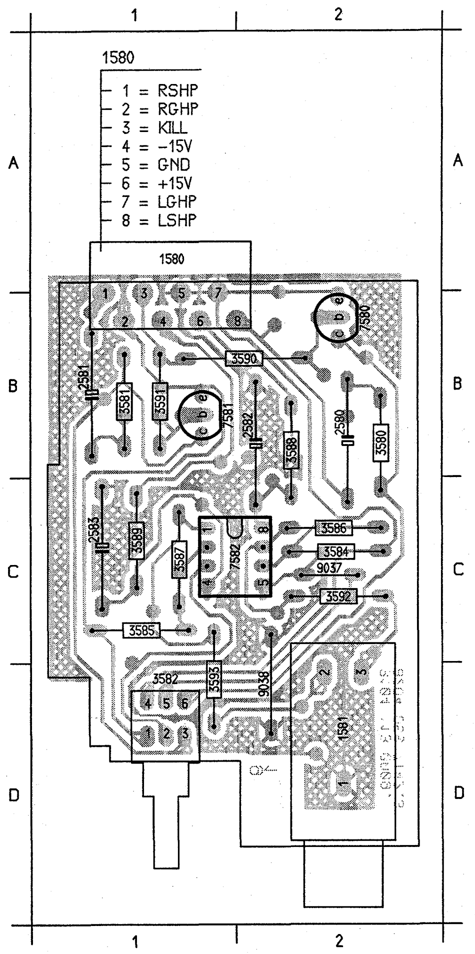
XLR PANEL SOLDER SIDE


3122 109 97433
7001
7002
7005
7009
7010
7201
7202
7331
7332
3001
3002
3201
3202
PROG.E.Vo

HEADPHONE CIRCUIT DIAGRAM

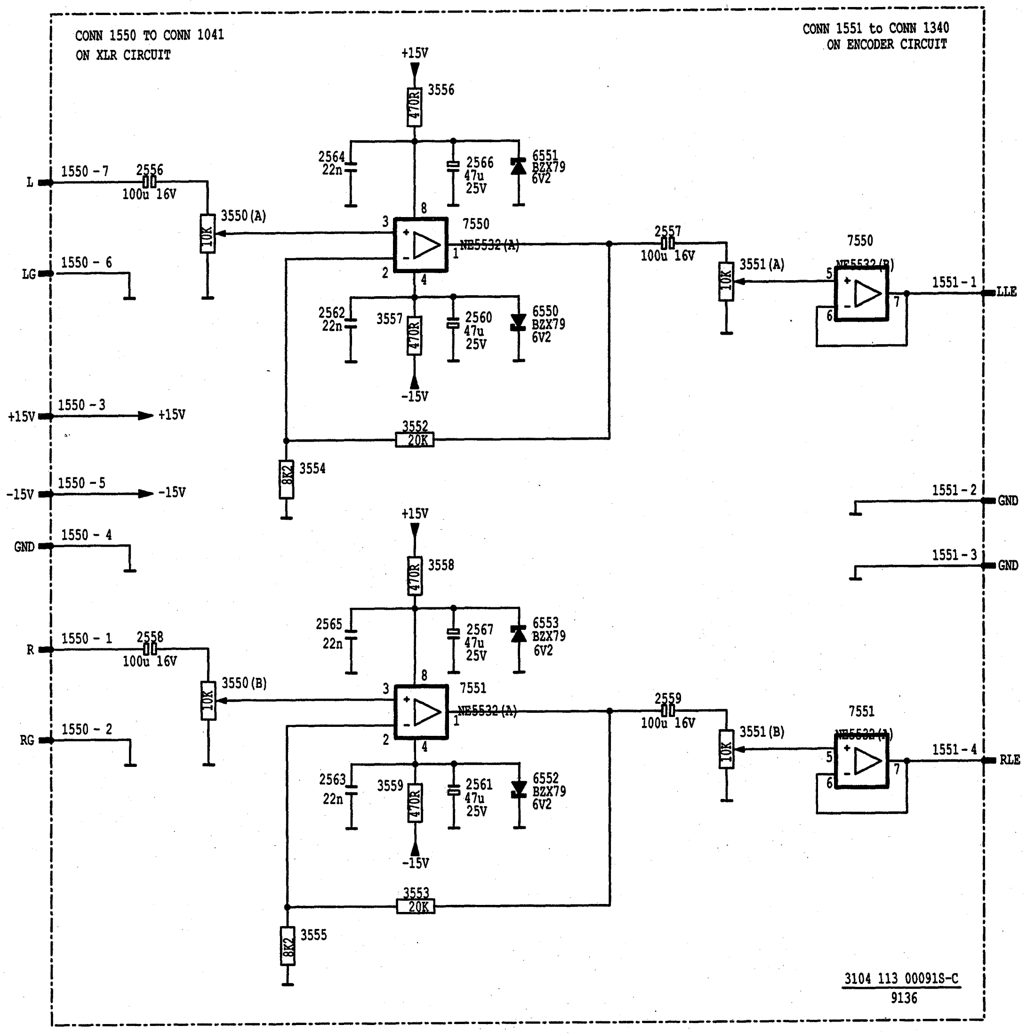

LSHP
1580 - 8
2580
100u 10V
3580
100R
3590
1K2
7580
BC338-25
3582 (A)
10K
7582
NJM4556D (A)
5
6
7
3592
120R
1581 - 3
headph. LEFT
LGHP
1580 - 7
3586
27K
3584
12K
KILLC
1580 - 3
+15V
10R
3588
1581 - 1
headph. GND
2582
100u 25V
RSHP
1580 - 1
2581
100u 10V
3581
100R
3591
1K2
7581
BC338-25
3582 (B)
10K
8
3
7582
NJM4556D (B)
2
1
4
3593
120R
1581 - 2
headph. RIGHT
RGHP
1580 - 2
10R
3589
2583
100u 25V
+15 V
1580 - 6
+15V
-15V
-15 V
1580 - 4
-15V
3587
27K
3585
12K
GND
1580 - 5
CONN 1580 TO CONN 1150
ON DECODER CIRCUIT
3104 113 00091S-B
9136

HEADPHONE PANEL

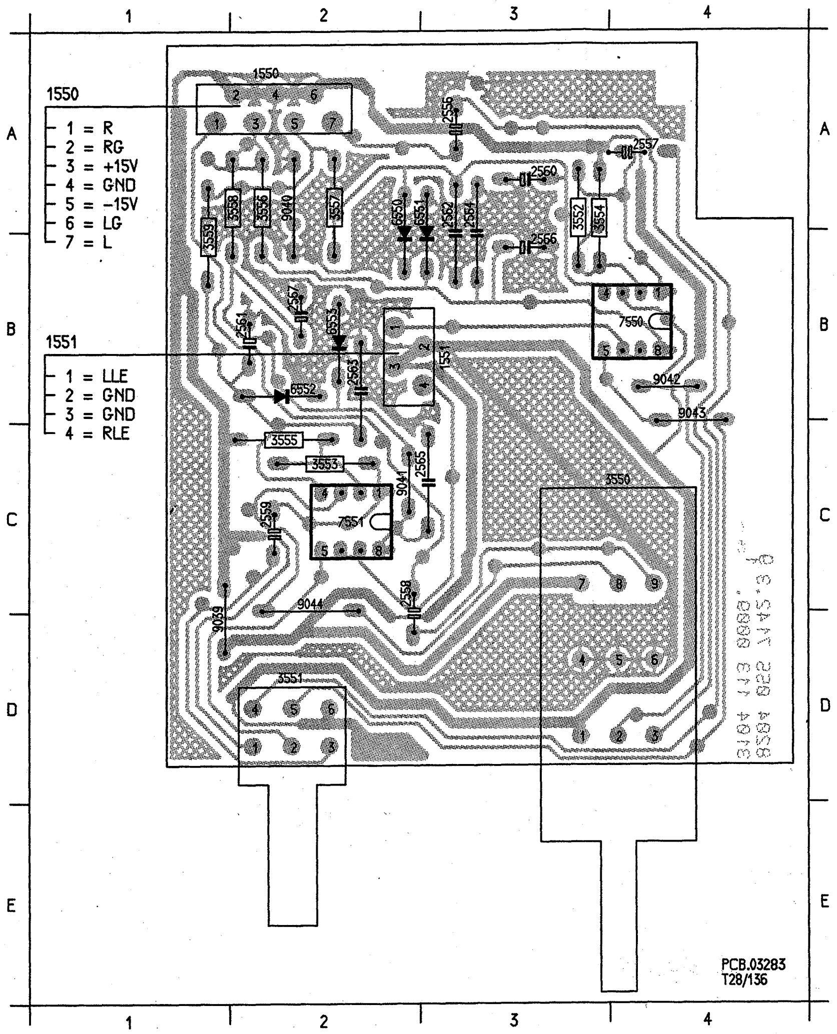

1
2
A
B
C
D
1580
1 = RSHP
2 = RGHP
3 = KILL
4 = -15V
5 = GND
6 = +15V
7 = LGHP
8 = LSHP
3590
2581
3581
3591
7581
2582
3588
2580
3580
7580
2583
3589
3587
7582
3586
3584
9037
3592
3585
3582
3593
9038
1581
PCB.03282
T28/135

1580	A1
1581	D2
2580	B2
2581	B1
2582	B2
2583	C1
3580	B2
3581	B1
3582	D1
3584	C2
3585	C1
3586	C2
3587	C1
3588	B2
3589	C1
3590	B1
3591	B1
3592	C2
3593	D1
7580	B2
7581	B1
7582	C2
9037	C2
9038	D2

LEVEL AND BALANCE CIRCUIT DIAGRAM


CONN 1550 TO CONN 1041
ON XLR CIRCUIT
CONN 1551 to CONN 1340
ON ENCODER CIRCUIT
L
1550 - 7
2556
100u 16V
3550 (A)
10K
LG
1550 - 6
+15V
3556
470R
2564
22n
2566
47u
25V
6551
BZX79
6V2
7550
NE5532 (A)
2562
22n
3557
470R
2560
47u
25V
6550
BZX79
6V2
-15V
2557
100u 16V
3551 (A)
10K
7550
NE5532 (B)
1551 - 1
LLE
3552
20K
3554
8K2
+15V
1550 - 3
+15V
-15V
1550 - 5
-15V
GND
1550 - 4
1551 - 2
GND
1551 - 3
GND
3558
470R
2565
22n
2567
47u
25V
6553
BZX79
6V2
R
1550 - 1
2558
100u 16V
3550 (B)
10K
RG
1550 - 2
7551
NE5532 (A)
2563
22n
3559
470R
2561
47u
25V
6552
BZX79
6V2
2559
100u 16V
3551 (B)
10K
7551
NE5532 (A)
1551 - 4
RLE
3553
20K
3555
8K2
3104 113 00091S-C
9136

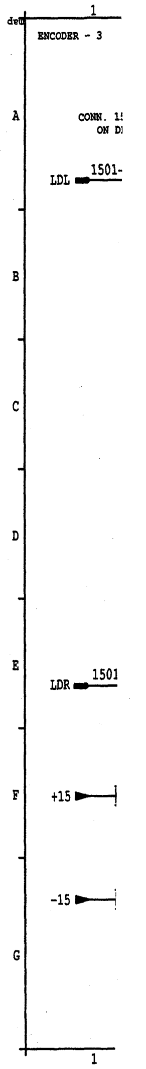
LEVEL AND BALANCE PANEL


1
2
3
4
A
B
C
D
E
1550
1 = R
2 = RG
3 = +15V
4 = GND
5 = -15V
6 = LG
7 = L
1551
1 = LLE
2 = GND
3 = GND
4 = RLE
3559
3558
3556
9040
3557
6550
6551
2562
2564
2556
2557
2560
2566
3552
3554
7550
2567
2561
6553
2563
6552
9042
9043
3555
3553
9041
2565
7551
2559
2558
9039
9044
3550
3551
3104 113 0009
4858 550 145.3
PCB.03283
T28/136

1550	A2
1551	B3
2556	A3
2557	A4
2558	C2
2559	C2
2560	A3
2561	B2
2562	A3
2563	B2
2564	A3
2565	C3
2566	B3
2567	B2
3550	C3
3551	D2
3552	B3
3553	C2
3554	B3
3555	C2
3556	A2
3557	A2
3558	A2
3559	B1
6550	A2
6551	A3
6552	B2
6553	B2
7550	B4
7551	C2
9039	D1
9040	A2
9041	C2
9042	B4
9043	B4
9044	C2

LEVEL D

1501	A 1	27
1501	E 1	27
2750	D 7	27
2751	A 7	27
2752	F 7	27


1
ENCODER - 3
A
CONN. 1
ON D
LDL
1501-
B
C
D
E
LDR
1501
F
+15
-15
G
1

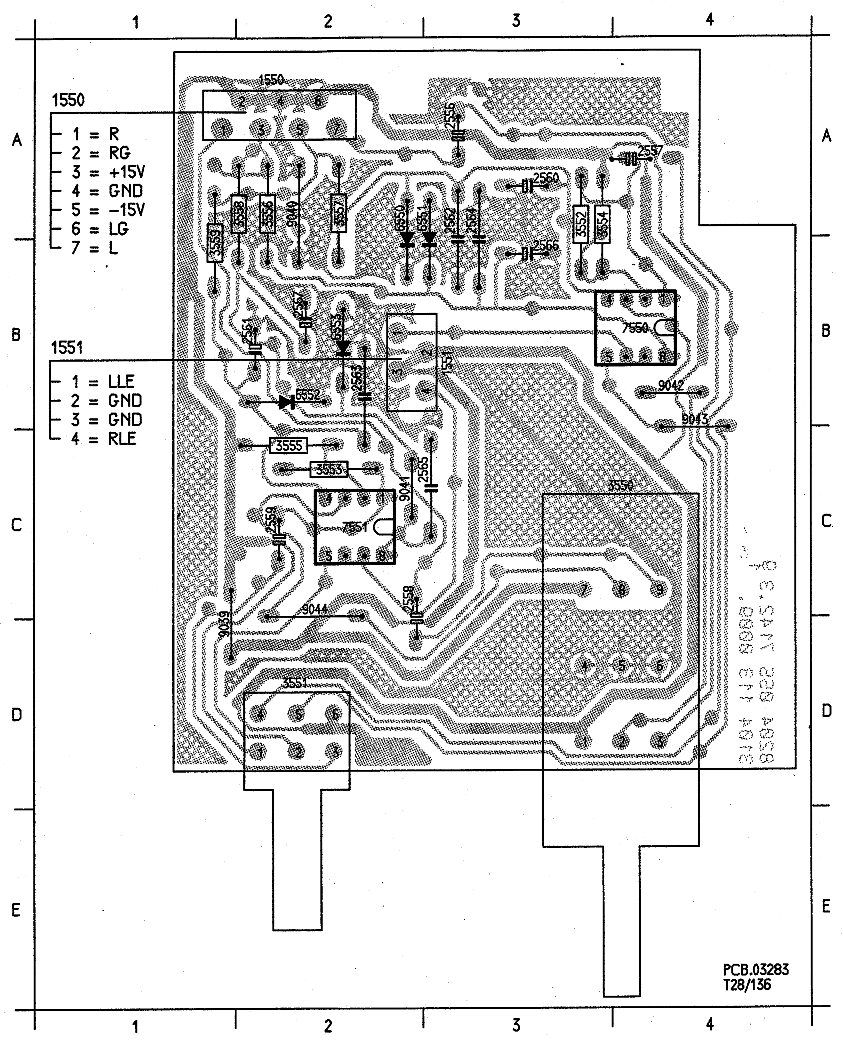
LLE

GND

GND

RLE

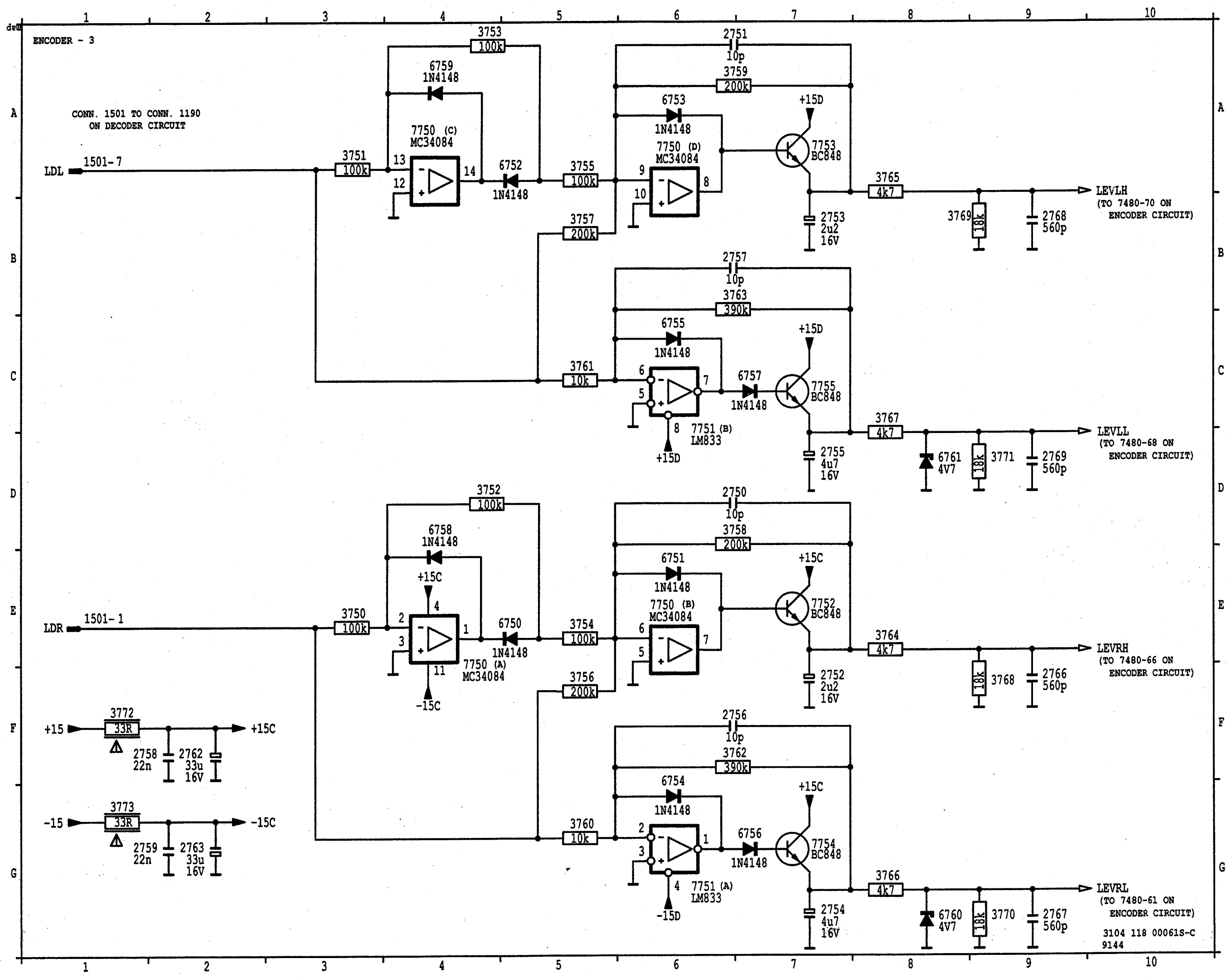
LEVEL AND BALANCE PANEL


1550
1 = R
2 = RG
3 = +15V
4 = GND
5 = −15V
6 = LG
7 = L
1551
1 = LLE
2 = GND
3 = GND
4 = RLE
7550
7551
3550
3551
3555
9042
9043
9044
PCB.05283
T28/136
1
2
3
4
A
B
C
D
E

1550	A2
1551	B3
2556	A3
2557	A4
2558	C2
2559	C2
2560	A3
2561	B2
2562	A3
2563	B2
2564	A3
2565	C3
2566	B3
2567	B2
3550	C3
3551	D2
3552	B3
3553	C2
3554	B3
3555	C2
3556	A2
3557	A2
3558	A2
3559	B1
6550	A2
6551	A3
6552	B2
6553	B2
7550	B4
7551	C2
9039	D1
9040	A2
9041	C2
9042	B4
9043	B4
9044	C2

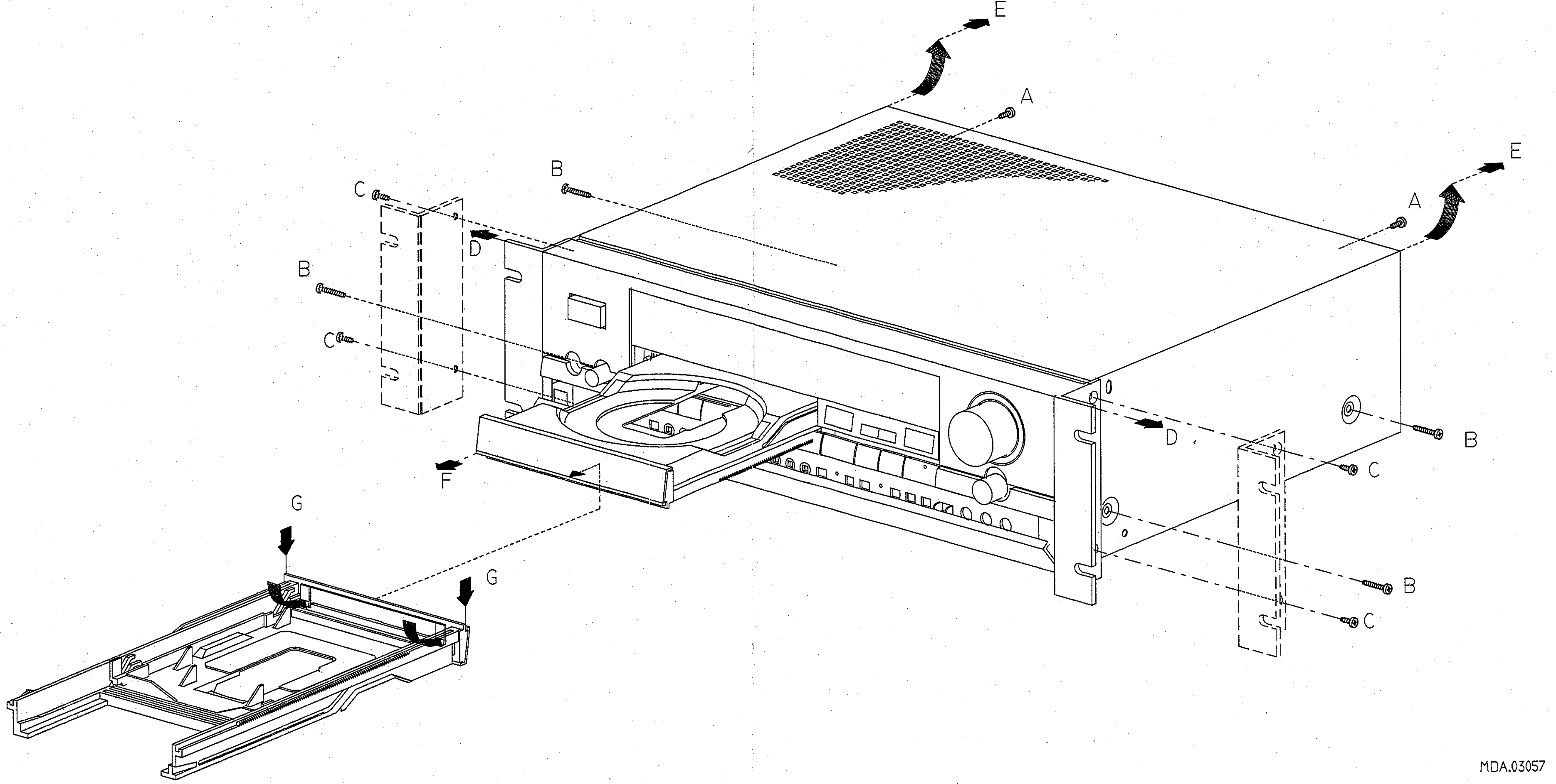
LEVEL DETECTION CIRCUIT DIAGRAM

1501	A 1
1501	E 1
2750	D 7
2751	A 7
2752	F 7
2753	B 7
2754	G 7
2755	D 7
2756	F 7
2757	B 7
2758	F 1
2759	G 1
2762	F 2
2763	G 2
2766	F 9
2767	G 9
2768	B 9
2769	D 9
3750	E 3
3751	A 3
3752	D 4
3753	A 4
3754	E 5
3755	A 5
3756	F 5
3757	B 5
3758	D 6
3759	A 6
3760	G 5
3761	C 5
3762	F 6
3763	B 6
3764	E 8
3765	A 8
3766	G 8
3767	C 8
3768	F 9
3769	B 8
3770	G 9
3771	D 9
3772	F 1
3773	G 1
6750	E 4
6751	E 6
6752	A 4
6753	A 6
6754	G 6
6755	C 6
6756	G 7
6757	C 7
6758	D 4
6759	A 4
6760	G 8
6761	D 8
7750	A 4
7750	F 4
7750	E 6
7750	A 6
7751	C 6
7751	G 6
7752	E 7
7753	A 7
7754	G 7
7755	C 7

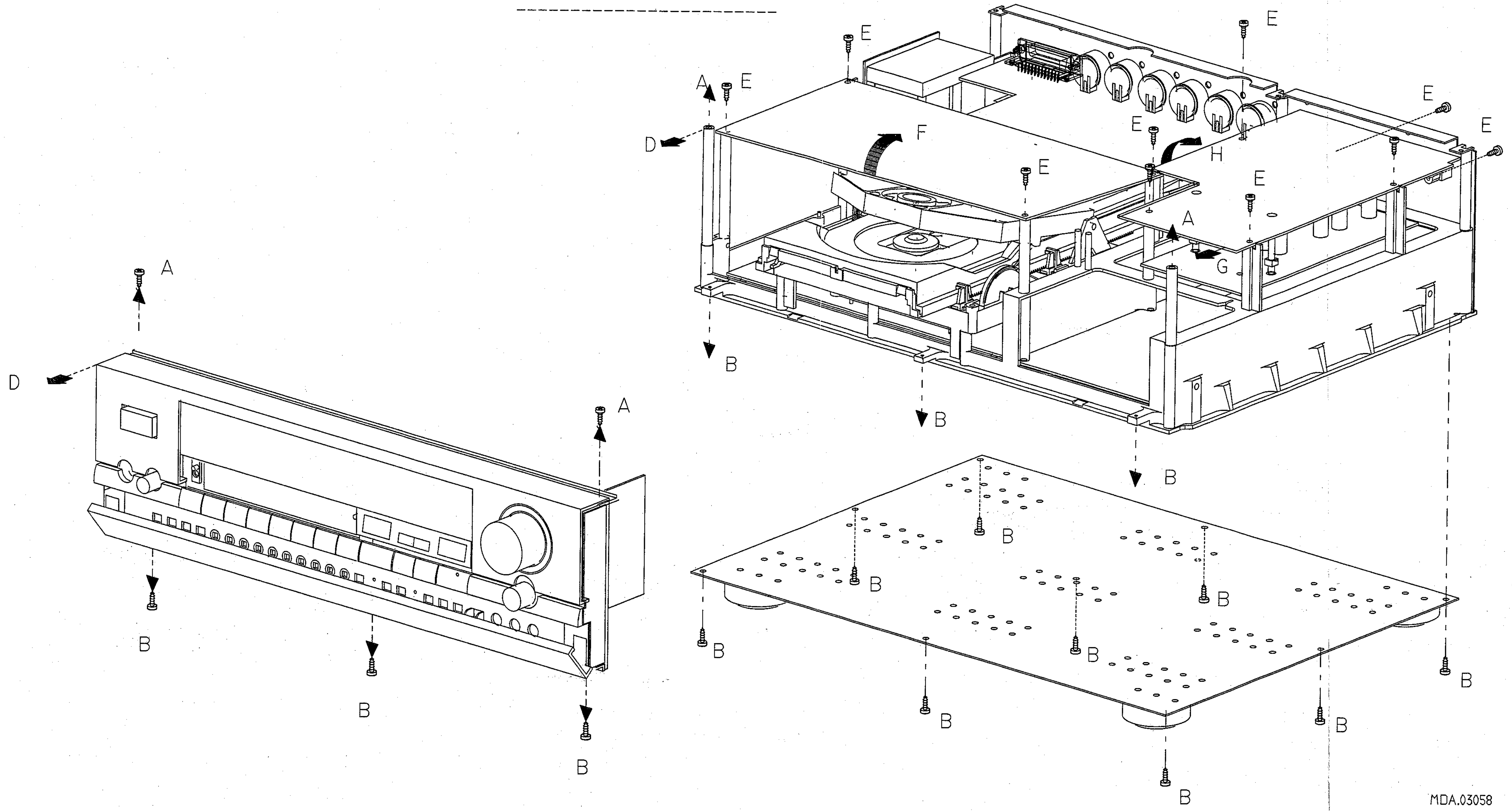

ENCODER - 3
CONN. 1501 TO CONN. 1190 ON DECODER CIRCUIT
LDL
1501-7
LDR
1501- 1
3751 100k
3753 100k
6759 1N4148
7750 (C) MC34084
6752 1N4148
3755 100k
3757 200k
2751 10p
3759 200k
6753 1N4148
7750 (D) MC34084
+15D
7753 BC848
2753 2u2 16V
3765 4k7
3769 18k
2768 560p
LEVLH
(TO 7480-70 ON ENCODER CIRCUIT)
2757 10p
3763 390k
6755 1N4148
3761 10k
7751 (B) LM833
6757 1N4148
7755 BC848
2755 4u7 16V
3767 4k7
6761 4V7
3771 18k
2769 560p
LEVLL
(TO 7480-68 ON ENCODER CIRCUIT)
3752 100k
6758 1N4148
3750 100k
6750 1N4148
7750 (A) MC34084
3754 100k
3756 200k
2750 10p
3758 200k
6751 1N4148
7750 (B) MC34084
+15C
7752 BC848
2752 2u2 16V
3764 4k7
3768 18k
2766 560p
LEVRH
(TO 7480-66 ON ENCODER CIRCUIT)
+15
3772 33R
2758 22n
2762 33u 16V
+15C
-15
3773 33R
2759 22n
2763 33u 16V
-15C
2756 10p
3762 390k
6754 1N4148
3760 10k
7751 (A) LM833
-15D
6756 1N4148
7754 BC848
2754 4u7 16V
3766 4k7
6760 4V7
3770 18k
2767 560p
LEVRL
(TO 7480-61 ON ENCODER CIRCUIT)
3104 118 00061S-C
9144
1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G

The components of this circuit diagram are situated on the ENCODER PANEL.

DEMOUNTING TRAYFRONT

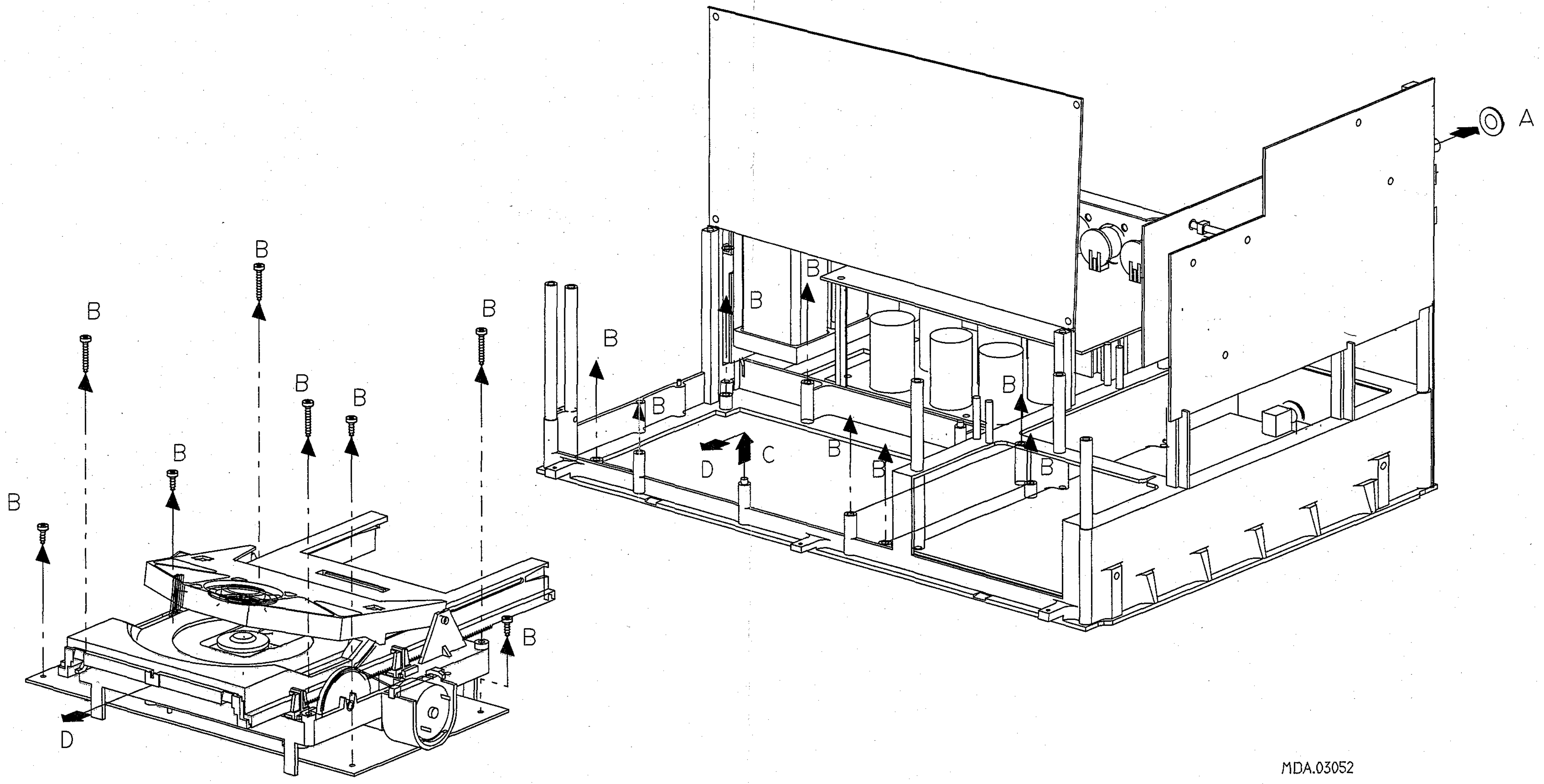

E
A
E
A
B
C
D
B
C
D
B
C
F
G
G
B
C
MDA.03057

DEMOUNTING FRONT


E
E
A
E
D
F
E
E
H
E
E
E
A
G
A
D
A
B
B
B
B
B
B
B
B
B
B
B
B
B
B
B
B

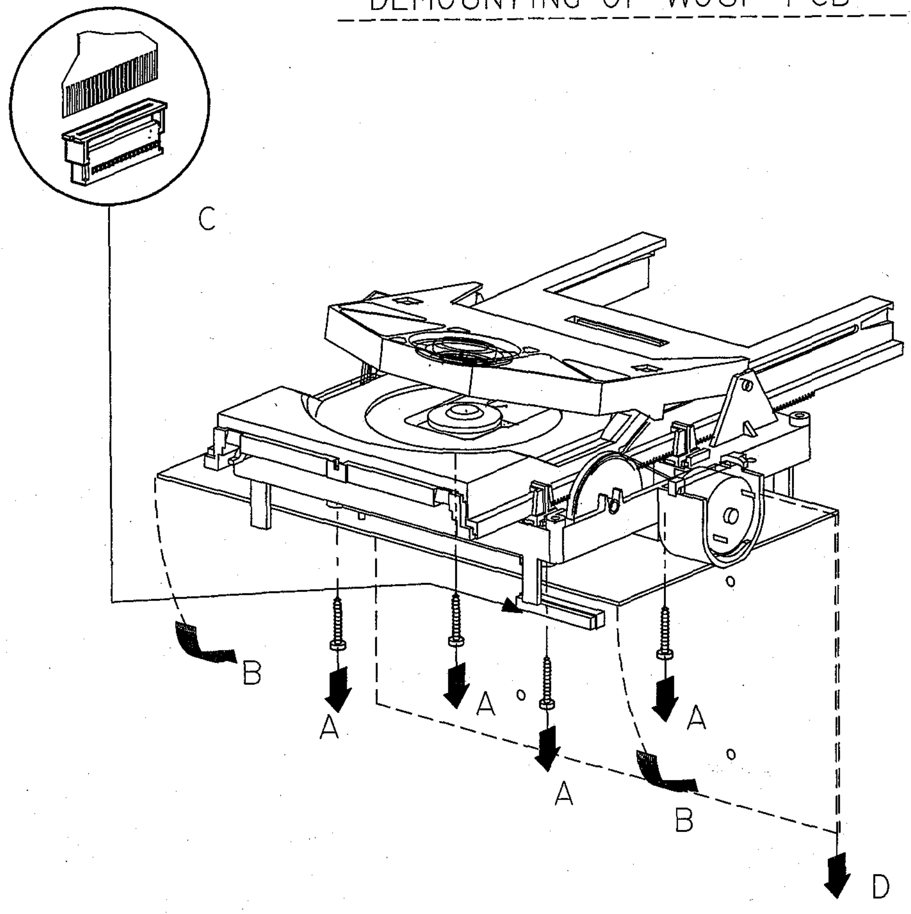
MDA.03058

DEMOUNTING TRAY-ASSY

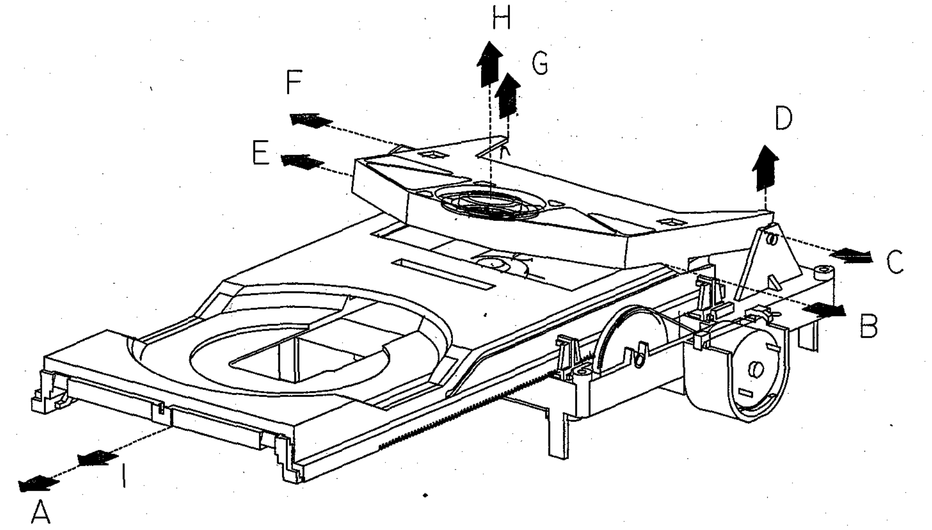

A
B
B
B
B
B
B
B
B
B
B
B
B
B
B
B
B
B
B
C
D
D
MDA.03052

DISASSEMBLY WOSP CDM

DEMOUNTING OF WOSP-PCB



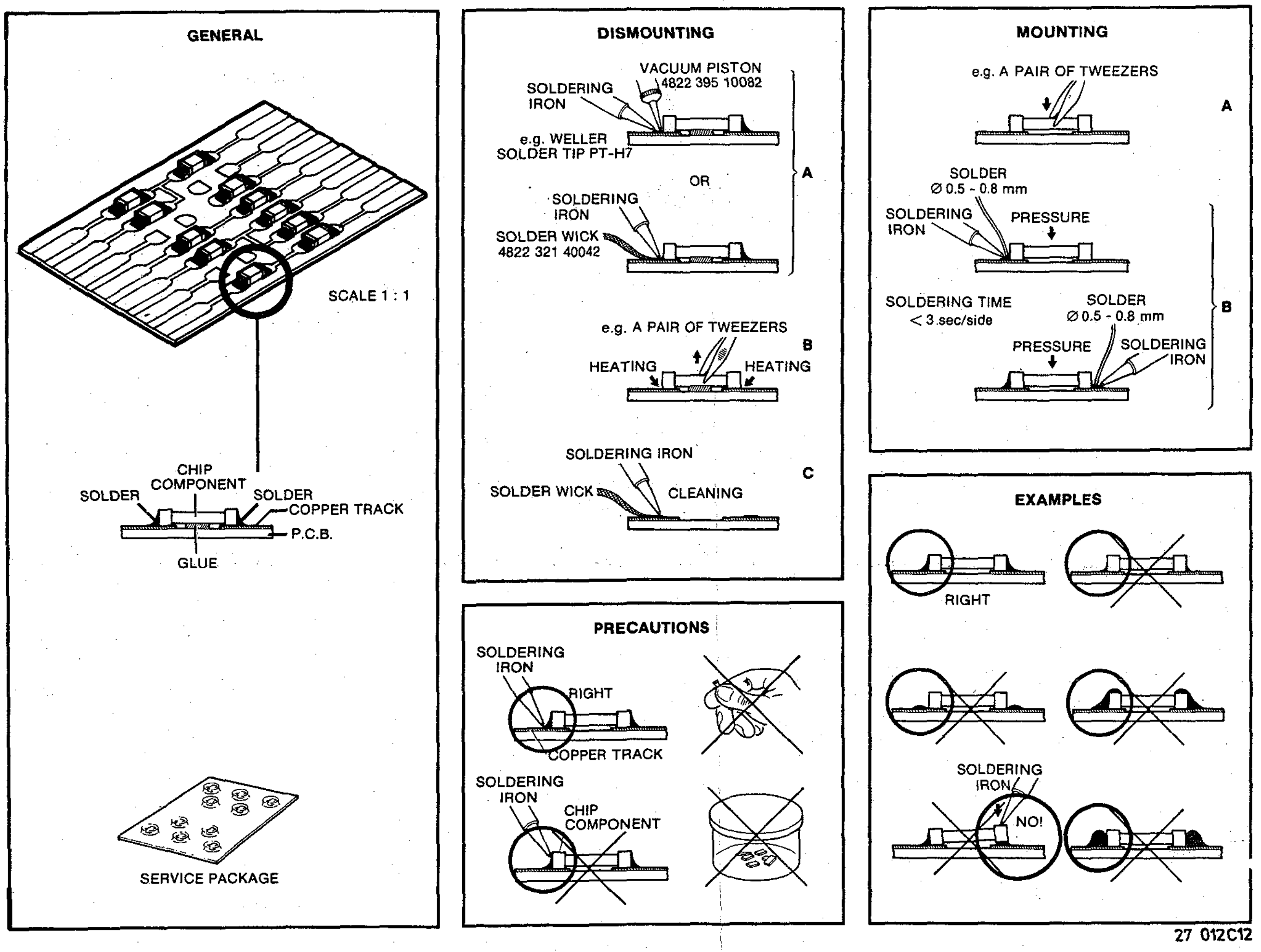
DEMOUNTING OF CDM



MDA.03054

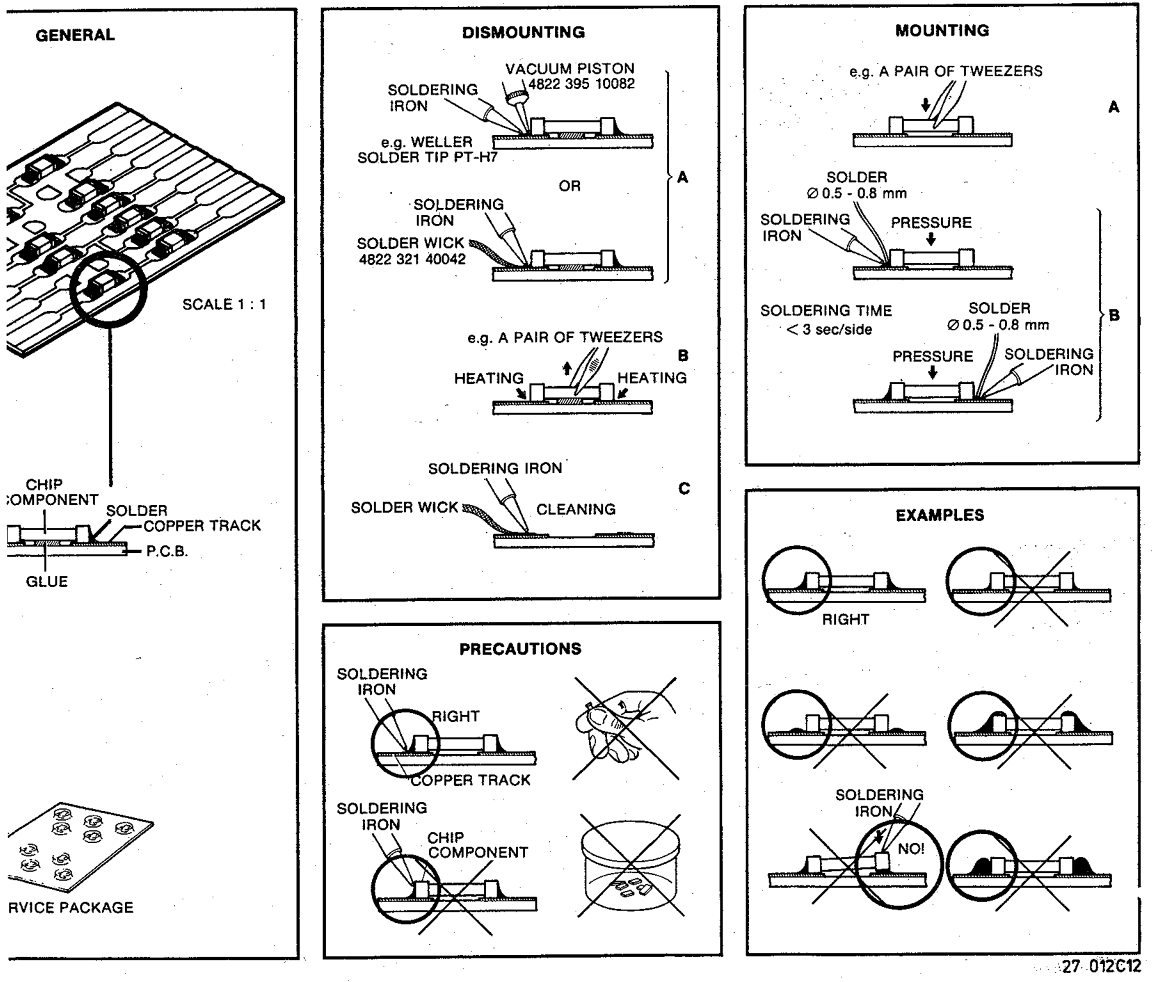
SERVICE HINTS

In the set chip componens have been applied.
For disassembly and assembly of chip components see the figure below.

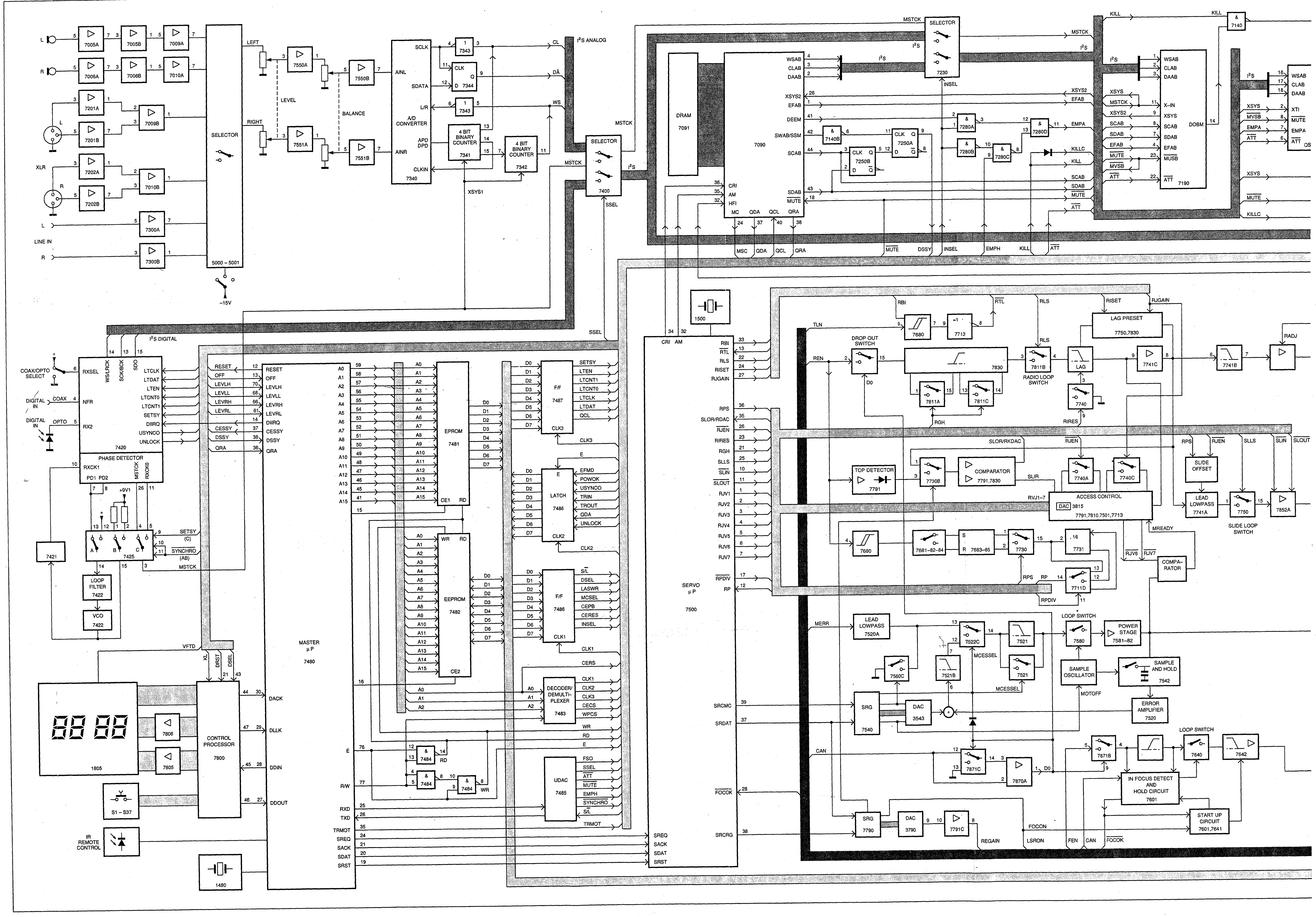

GENERAL
SCALE 1 : 1
CHIP COMPONENT
SOLDER
SOLDER
COPPER TRACK
P.C.B.
GLUE
SERVICE PACKAGE
DISMOUNTING
VACUUM PISTON 4822 395 10082
SOLDERING IRON
e.g. WELLER SOLDER TIP PT-H7
OR
SOLDERING IRON
SOLDER WICK 4822 321 40042
A
e.g. A PAIR OF TWEEZERS
HEATING
HEATING
B
SOLDERING IRON
SOLDER WICK
CLEANING
C
PRECAUTIONS
SOLDERING IRON
RIGHT
COPPER TRACK
SOLDERING IRON
CHIP COMPONENT
MOUNTING
e.g. A PAIR OF TWEEZERS
A
SOLDER Ø 0.5 - 0.8 mm
SOLDERING IRON
PRESSURE
SOLDERING TIME < 3 sec/side
SOLDER Ø 0.5 - 0.8 mm
PRESSURE
SOLDERING IRON
B
EXAMPLES
RIGHT
SOLDERING IRON
NO!

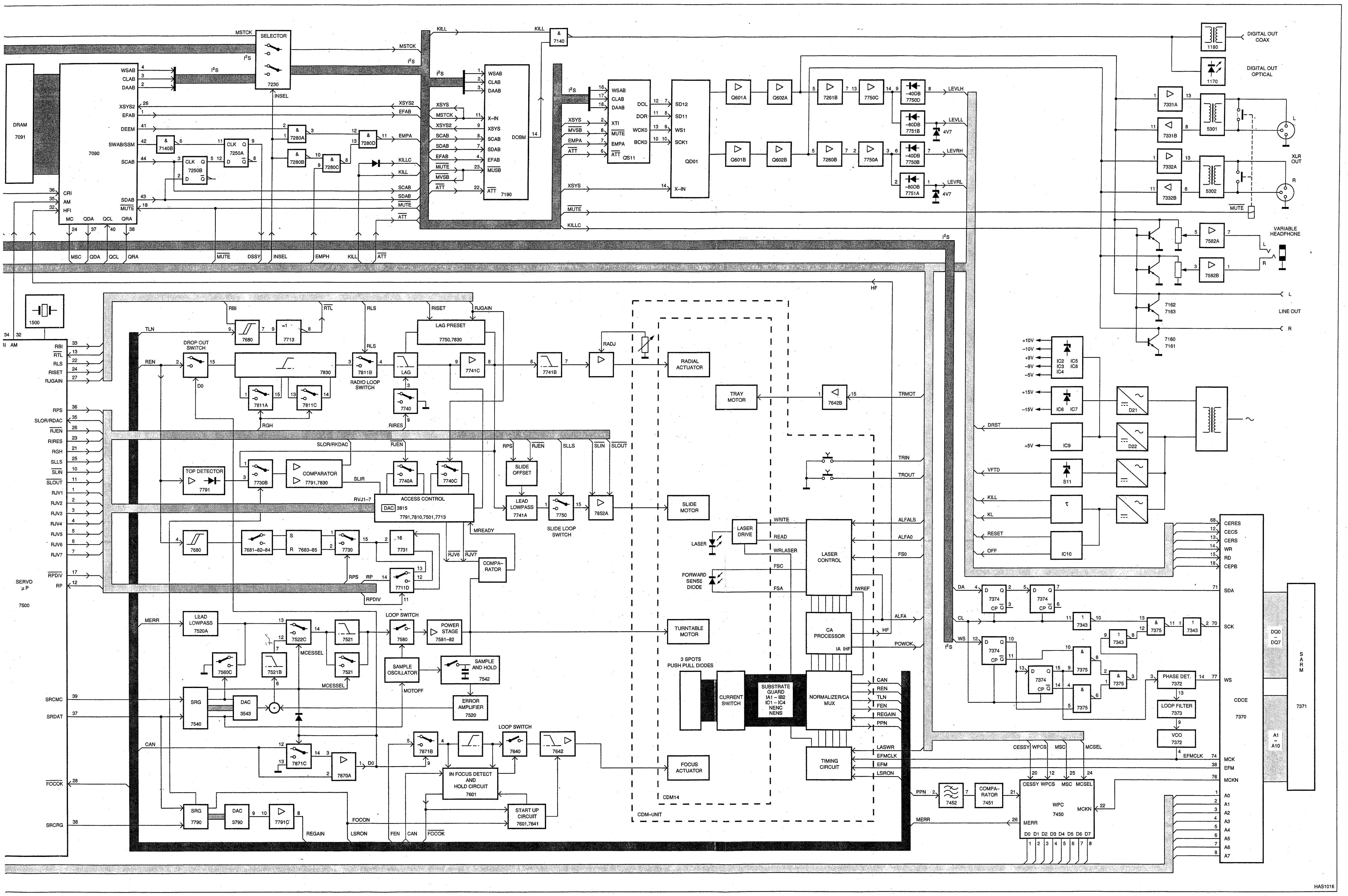
27 012C12

mponens have been applied.
and assembly of chip components see


GENERAL
SCALE 1 : 1
CHIP
OMPONENT
SOLDER
COPPER TRACK
P.C.B.
GLUE
RVICE PACKAGE
DISMOUNTING
VACUUM PISTON
4822 395 10082
SOLDERING
IRON
e.g. WELLER
SOLDER TIP PT-H7
OR
SOLDERING
IRON
SOLDER WICK
4822 321 40042
A
e.g. A PAIR OF TWEEZERS
B
HEATING
HEATING
SOLDERING IRON
SOLDER WICK
CLEANING
C
MOUNTING
e.g. A PAIR OF TWEEZERS
A
SOLDER
Ø 0.5 - 0.8 mm
SOLDERING
IRON
PRESSURE
SOLDERING TIME
< 3 sec/side
SOLDER
Ø 0.5 - 0.8 mm
PRESSURE
SOLDERING
IRON
B
PRECAUTIONS
SOLDERING
IRON
RIGHT
COPPER TRACK
SOLDERING
IRON
CHIP
COMPONENT
EXAMPLES
RIGHT
SOLDERING
IRON
NO!
27 012C12

BLOCKDIAGRAM

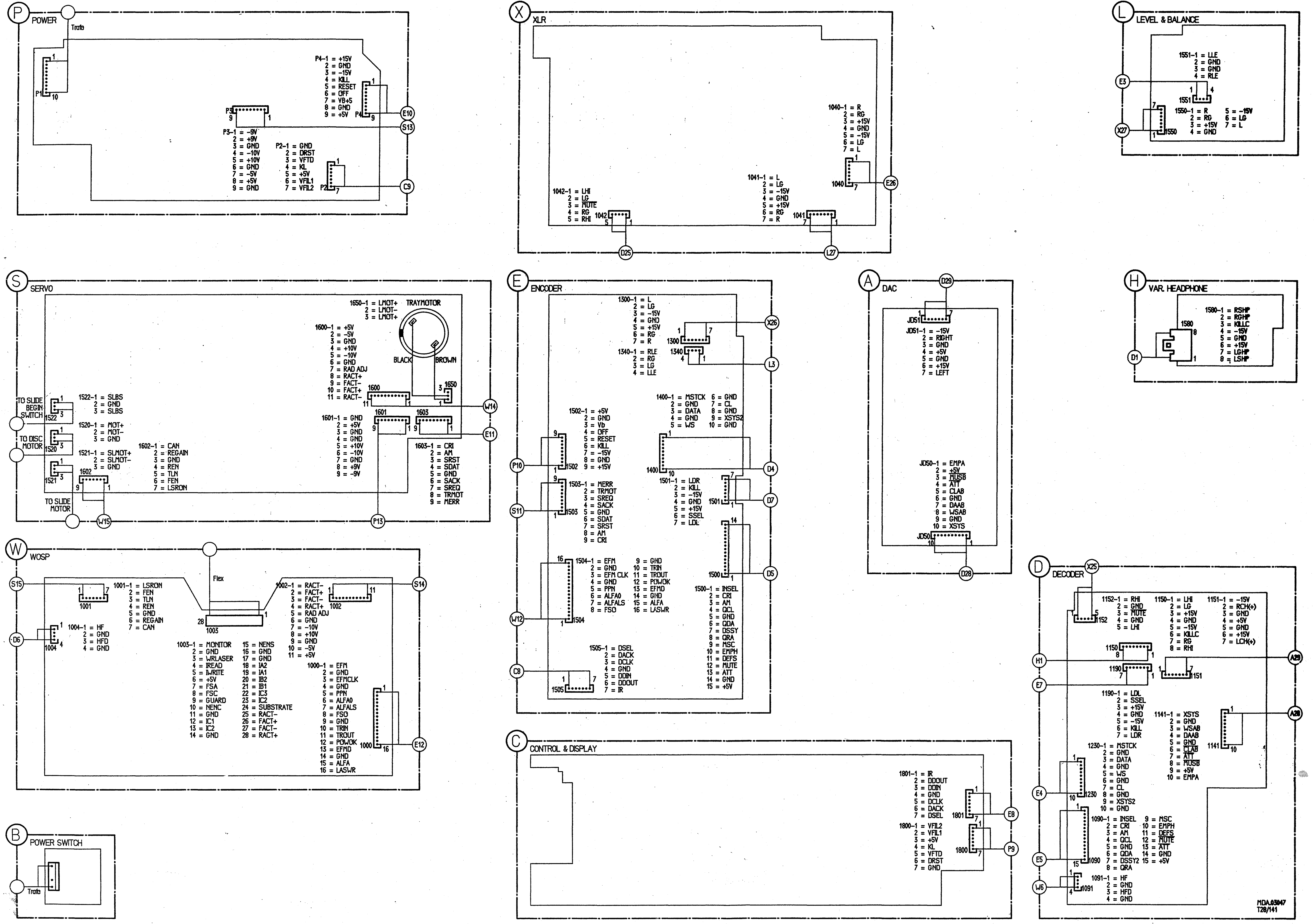

SELECTOR
5000 – 5001
LEVEL
BALANCE
A/D CONVERTER
7340
4 BIT BINARY COUNTER
7341
7342
I²S ANALOG
SELECTOR
7400
DRAM
7091
7090
SELECTOR
7230
7190
I²S DIGITAL
PHASE DETECTOR
7420
7425
7421
LOOP FILTER
7422
VCO
7422
MASTER µP
7480
EPROM
7481
EEPROM
7482
LATCH
7486
F/F
7487
F/F
7486
DECODER/ DEMULTI-PLEXER
7483
UDAC
7485
CONTROL PROCESSOR
7800
1805
S1 – S37
IR REMOTE CONTROL
1480
1500
SERVO µP
7500
DROP OUT SWITCH
TOP DETECTOR
7791
COMPARATOR
7791,7830
LAG PRESET
7750,7830
RADIO LOOP SWITCH
ACCESS CONTROL
DAC 3815
7791,7810,7501,7713
SLIDE OFFSET
LEAD LOWPASS
7741A
SLIDE LOOP SWITCH
COMPA-RATOR
LEAD LOWPASS
7520A
LOOP SWITCH
POWER STAGE
7581–82
SAMPLE OSCILLATOR
SAMPLE AND HOLD
7542
ERROR AMPLIFIER
7520
SRG
7540
DAC
3543
IN FOCUS DETECT AND HOLD CIRCUIT
7601
START UP CIRCUIT
7601,7641
SRG
7790
DAC
3790
7791C
COAX/OPTO SELECT
DIGITAL IN
XLR
LINE IN
-15V
+9V1


DRAM
7091
7090
WSAB
CLAB
DAAB
XSYS2
EFAB
DEEM
SWAB/SSM
SCAB
CRI
AM
HFI
SDAB
MUTE
MC
QDA
QCL
QRA
MSTCK
SELECTOR
7230
INSEL
I²S
7140B
CLK 7250A
CLK 7250B
7280A
7280B
7280C
7280D
EMPA
KILLC
KILL
SCAB
SDAB
ATT
7140
7190
DOBM
XSYS
MSTCK
MVSB
X–IN
QS11
DOL
DOR
WCK0
BCK0
XTI
SD12
SD11
WS1
SCK1
QD01
Q601A
Q602A
Q601B
Q602B
7261B
7750C
7260B
7750A
–40DB 7750D
–80DB 7751B
–40DB 7750B
–80DB 7751A
4V7
LEVLH
LEVLL
LEVRH
LEVRL
1180
DIGITAL OUT COAX
1170
DIGITAL OUT OPTICAL
7331A
7331B
7332A
7332B
5301
5302
XLR OUT
L
R
VARIABLE HEADPHONE
7582A
7582B
7162
7163
7160
7161
LINE OUT
MSC
QDA
QCL
QRA
MUTE
DSSY
INSEL
EMPH
KILL
ATT
HF
1500
SERVO µP
7500
RBI
RTL
RLS
RISET
RJGAIN
RPS
SLOR/RDAC
RJEN
RIRES
RGH
SLLS
SLIN
SLOUT
RJV1
RJV2
RJV3
RJV4
RJV5
RJV6
RJV7
RPDIV
RP
SRCMC
SRDAT
FOCOK
SRCRG
TLN
DROP OUT SWITCH
REN
D0
7680
7713
LAG PRESET
7750,7830
7830
7811A
7811B
7811C
RADIO LOOP SWITCH
LAG
7740
7741C
7741B
RADJ
RADIAL ACTUATOR
TRAY MOTOR
7642B
TRMOT
TOP DETECTOR
7791
7730B
COMPARATOR
7791,7830
SLIR
7740A
7740C
SLIDE OFFSET
LEAD LOWPASS
7741A
7750
SLIDE LOOP SWITCH
7852A
SLIDE MOTOR
ACCESS CONTROL
RVJ1–7
DAC 3815
7791,7810,7501,7713
MREADY
7681–82–84
S R 7683–85
7730
7731
7711D
COMPARATOR
MERR
LEAD LOWPASS 7520A
7522C
7521
MCESSEL
LOOP SWITCH
7580
POWER STAGE 7581–82
TURNTABLE MOTOR
7560C
7521B
SAMPLE OSCILLATOR
SAMPLE AND HOLD 7542
MOTOFF
ERROR AMPLIFIER 7520
SRG 7540
DAC 3543
CAN
7871C
7870A
7871B
7640
7642
IN FOCUS DETECT AND HOLD CIRCUIT 7601
START UP CIRCUIT 7601,7641
SRG 7790
DAC 3790
7791C
FOCON
REGAIN
LSRON
FEN
FOCUS ACTUATOR
CDM14
CDM–UNIT
LASER
LASER DRIVE
FORWARD SENSE DIODE
WRITE
READ
WRLASER
FSC
FSA
LASER CONTROL
IWREF
CA PROCESSOR
IA IHF
3 SPOTS PUSH PULL DIODES
CURRENT SWITCH
SUBSTRATE GUARD IA1 – IB2 IC1 – IC4 NENC NENS
NORMALIZER/CA MUX
TIMING CIRCUIT
TRIN
TROUT
ALFALS
ALFA0
FS0
ALFA
POWOK
LASWR
EFMCLK
EFM
PPN
+10V
–10V
+9V
–9V
–5V
IC2 IC5 IC3 IC8 IC4
+15V
–15V
IC6 IC7
D21
D22
+5V
IC9
S11
IC10
DRST
VFTD
KILL
KL
RESET
OFF
DA
CL
WS
7374
7375
7343
PHASE DET. 7372
LOOP FILTER 7373
VCO 7372
CESSY
WPCS
MSC
MCSEL
7452
COMPARATOR 7451
WPC 7450
MCKN
D0 D1 D2 D3 D4 D5 D6 D7
CERES
CECS
CERS
WR
RD
CEPB
SDA
SCK
CDCE
7370
MCK
EFM
MCKN
A0
A1
A2
A3
A4
A5
A6
A7
SARM
7371
DQ0 – DQ7
A1 – A10
HAS1016

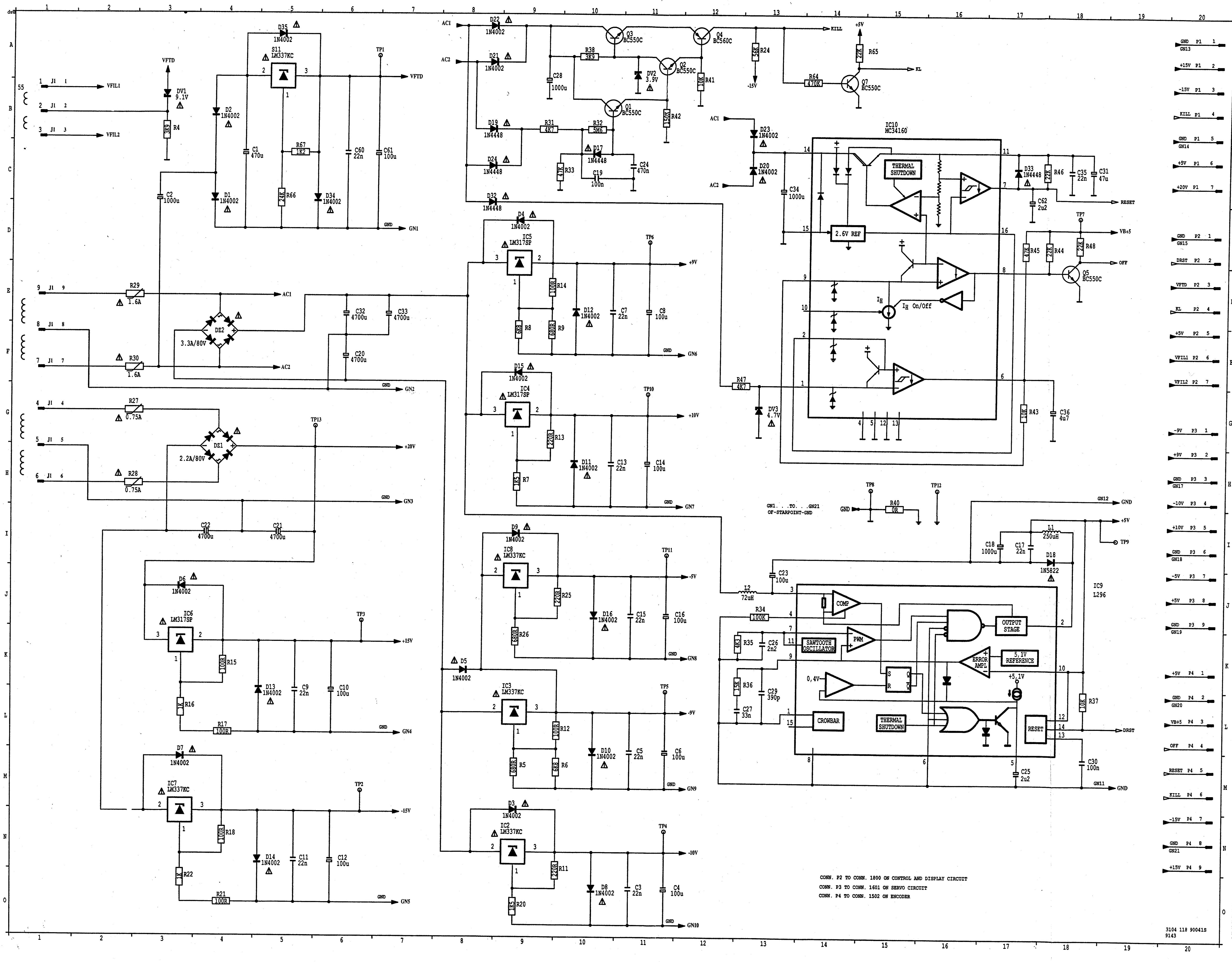
A0-10	RAM Addressbus Bit 0 - 10
AINL	Left Channel Analog Input
AINR	Right Channel Analog Input
AINT	Absorption Integrator
ALFA	Actual Absorption
ALFA0	Absorption Set
ALFALS	Absorption Loop Switch
AM	Additional Mute
APD	Analog Power Down
ATT	Attenuation
CA	Central Apperture Signal
CAN	Central Apperture Signal Normalized
CE	Chip Enable
CECS	CIRC EFM Chip Select
CEFS	CIRC EFM Frame Sync
CEPB	CIRC EFM Pause Bit
CERES	CIRC EFM Reset
CERS	CIRC EFM Register Select
CESSY	CIRC EFM Subcode Sync
CL	Clock
CLAB	Clock Signal Decoder-A to Filter-B
CLK	System Clock Input
CRI	Counter Reset Inhit
CS	Chip Select
D0 - 7	Data Bus Bit 0 - 7
DA	Data
DAAB	Data Signal Decoder-A to Filter-B
DACK	Display Acknowledge
DDIN	Display Data Input
DDOUT	Display Data Output
DEC	Deemphasis Control
DEEM	Deemphasis
DIIRQ	Digital Input Interrupt Request
DO	Drop Out
DOBM	Digital Out Signal
DPD	Digital Power Down
DSEL	Display Select
DSSY	Decoder Subcode Sync
EFAB	Error Flag Decoder-A to Filter-B
EFM	EFM Serial Data
EFMCLK	Eight to Fourteen Modulation
EFMD	Eight to Fourteen Modulation Detect
FEN	Focus Error Normalized
FOCOK	In Focus Signal
FOCON	Focus On
FSA	Forward Sense Diode Anode
FSC	Forward Sense Diode Cathode
FSO	Laser Power Set
GND	Ground
HF	High Frequency
HFI	High Frequency Input
IA	3 Spot Push Pull Diode Current
IB1-2	3 Spot Push Pull Diode Current
IC1-4	3 Spot Push Pull Diode Current
IHF	CA Current To Remainder Part Of CA Processor
INSEL	Input Selector
IR	Infrared Receiver Signal
IWREF	Laser Writing Power Reference
L	Left
L/R	Left/Right Select
LASWR	Laser Write/Non Read
LEVLH	Analog Level Left High
LEVLL	Analog Level Left Low
LEVRH	Analog Level Right High
LEVRL	Analog Level Right Low
LSRON	Laser On
LTCLK	Interface Data Bit Clock
LTCNT0-1	Interface Control
LTDAT	Interface Databus
LTEN	Interface Enable
MC	Motor Control Signal
MCK	Master Clock
MCKN	Master Clock NOT
MCSEL	Motor Control Select
MERR	Motor Control Error Signal

MREADY	Turntable Motor Ready
MSC	External Motor Control Input
MSTCK	Master Clock
MUSB	Soft Mute Signal
MUTE	Mute Signal
NFR	Output Level Convertor RX1
POWOK	Laser Power OK
PPN	Normalized Push Pull Signal
QCL	Q-Channel Clock Signal
QDA	Q-Channel Data Signal
QRA	Q-channel Request Acknowledge
R	Right
RADJ	Radial Gain Adjust
RBI	Radial Brake Inhibit
RD	µP Read Signal
RD0 - 7	RAM Databus Bit 0 - 7
REGAIN	Radial Gain Current
REN	Radial Error Normalized
RGH	Radial Gain High
RIRES	Radial Integrator Reset
RISET	Radial Integrator Preset
RJEN	Radial Jump Enable
RJGAIN	Radial Jump Gain
RJV1-7	Radial Jump Voltage
RLS	Radial Loop Switch
RP	Radial Polarity
RPDIV	Radial Polarity Divider
RPS	Radial Polarity Select
RST	Hard Reset
RTL	Radial Track Loss
RX1	IEC Format Digital Audio Data Input (Coaxial Input)
RX2	IEC Format Digital Audio Data Input (Optical Input)
RXD	Serial Data
RXSEL	Selection RX1 Or RX2
SACK	Servo Acknowledge
SCAB	Subcode Clock Decoder-A to Filter-B
SCK	Serial Clock (IS)
SCK/BCK	Shift/Bit Clock Audio Data
SCLK	Serial Output Data Clock
SD0 - 1	Serial Data (IS)
SDAB	Subcode Data Decoder-A to Filter-B
SDAT	Servo Data
SDATA	Serial Data Output
SDO	Serial Data Output Audio Databus
SETSY	Setting Sync Signal
SLBS	Slide Begin Switch
SLIN	Slide Inwards Pulse
SLLS	Slide Servo Loopswitch
SLOR/RKDAC	Slide Outwards Request/ADC Determination Radial Amplitude
SLOUT	Slide Outwards Pulse
SRCMC	Shift Register Clock Motor Control
SRCRG	Shift Register Clock Radial Gain
SRDAT	Shift Register Data
SREQ	Servo Request
SRST	Servo Reset
SSEL	Source Select
SWAB/SSM	Subcode Word/Start-Stop Motor Signal
TLN	Trackloss Normalized
TRIN	Tray In Switch
TRMOT	Tray Motor Control
TROUT	Tray Out Switch
TX	IEC Format Digital Data Output
TXD	Serial Clock
TXOE	Reset
UCH	Subcode U Channel
UNLOCK	Indication VCO Frequency
USYNC01	Indication Start New Frame
WPCS	Wobble Processor Chip Select
WR	µP Write Signal
WRLASER	Write Mode/Non Read Mode Laser
WS	Word Select Signal
WS/LRCK	Word Select Audio Data
WSAB	Word Select Decoder-A to Filter-B
WSBD	Word Select Filter-B to DAC
XSYS	Oscillator Signal

WIRING DIAGRAM


P POWER
Trafo
P1 1 10
P3 9 1
P4-1 = +15V 2 = GND 3 = −15V 4 = KILL 5 = RESET 6 = OFF 7 = VB+5 8 = GND 9 = +5V
P3-1 = −9V 2 = +9V 3 = GND 4 = −10V 5 = +10V 6 = GND 7 = −5V 8 = +5V 9 = GND
P2-1 = GND 2 = DRST 3 = VFTD 4 = KL 5 = +5V 6 = VFIL1 7 = VFIL2
P4 1 9
P2 1 7
E10
S13
C9
X XLR
1040-1 = R 2 = RG 3 = +15V 4 = GND 5 = −15V 6 = LG 7 = L
1042-1 = LHI 2 = LG 3 = MUTE 4 = RG 5 = RHI
1041-1 = L 2 = LG 3 = −15V 4 = GND 5 = +15V 6 = RG 7 = R
1040 1 7
1042 5 1
1041 7 1
E26
D25
L27
L LEVEL & BALANCE
1551-1 = LLE 2 = GND 3 = GND 4 = RLE
1551 1 4
1550-1 = R 2 = RG 3 = +15V 4 = GND 5 = −15V 6 = LG 7 = L
1550 7 1
E3
X27
S SERVO
1650-1 = LMOT+ 2 = LMOT− 3 = LMOT+
TRAYMOTOR
BLACK
BROWN
1650 3 1
1600-1 = +5V 2 = −5V 3 = GND 4 = +10V 5 = −10V 6 = GND 7 = RAD ADJ 8 = RACT+ 9 = FACT− 10 = FACT+ 11 = RACT−
1600 11 1
1601-1 = GND 2 = +5V 3 = GND 4 = GND 5 = +10V 6 = −10V 7 = GND 8 = +9V 9 = −9V
1601 9 1
1603
1603-1 = CRI 2 = AM 3 = SRST 4 = SDAT 5 = GND 6 = SACK 7 = SREQ 8 = TRMOT 9 = MERR
1522-1 = SLBS 2 = GND 3 = SLBS
1520-1 = MOT+ 2 = MOT− 3 = GND
1521-1 = SLMOT+ 2 = SLMOT− 3 = GND
1602-1 = CAN 2 = REGAIN 3 = GND 4 = REN 5 = TLN 6 = FEN 7 = LSRON
1602 9 1
TO SLIDE BEGIN SWITCH
TO DISC MOTOR
TO SLIDE MOTOR
1522 1520 1521
W14
E11
W15
P13
W WOSP
Flex
1001 1 7
1001-1 = LSRON 2 = FEN 3 = TLN 4 = REN 5 = GND 6 = REGAIN 7 = CAN
1002-1 = RACT− 2 = FACT+ 3 = FACT− 4 = RACT+ 5 = RAD ADJ 6 = GND 7 = −10V 8 = +10V 9 = GND 10 = −5V 11 = +5V
1002 1 11
1003 28 1
1004-1 = HF 2 = GND 3 = HFD 4 = GND
1004 1 4
1003-1 = MONITOR 2 = GND 3 = WRLASER 4 = IREAD 5 = IWRITE 6 = +5V 7 = FSA 8 = FSC 9 = GUARD 10 = NENC 11 = GND 12 = IC1 13 = IC2 14 = GND
15 = NENS 16 = GND 17 = GND 18 = IA2 19 = IA1 20 = IB2 21 = IB1 22 = IC3 23 = IC2 24 = SUBSTRATE 25 = RACT− 26 = FACT+ 27 = FACT− 28 = RACT+
1000-1 = EFM 2 = GND 3 = EFMCLK 4 = GND 5 = PPN 6 = ALFAO 7 = ALFALS 8 = FSO 9 = GND 10 = TRIN 11 = TROUT 12 = POWOK 13 = EFMD 14 = GND 15 = ALFA 16 = LASWR
1000 1 16
S15
S14
D6
E12
B POWER SWITCH
Trafo
E ENCODER
1300-1 = L 2 = LG 3 = −15V 4 = GND 5 = +15V 6 = RG 7 = R
1300 1 7
1340-1 = RLE 2 = RG 3 = LG 4 = LLE
1340 4 1
1400-1 = MSTCK 2 = GND 3 = DATA 4 = GND 5 = WS 6 = GND 7 = CL 8 = GND 9 = XSYS2 10 = GND
1400 1 10
1502-1 = +5V 2 = GND 3 = Vb 4 = OFF 5 = RESET 6 = KILL 7 = −15V 8 = GND 9 = +15V
1502 9 1
1503-1 = MERR 2 = TRMOT 3 = SREQ 4 = SACK 5 = GND 6 = SDAT 7 = SRST 8 = AM 9 = CRI
1503 9 1
1501-1 = LDR 2 = KILL 3 = −15V 4 = GND 5 = +15V 6 = SSEL 7 = LDL
1501 7 1
1504-1 = EFM 2 = GND 3 = EFM CLK 4 = GND 5 = PPN 6 = ALFAO 7 = ALFALS 8 = FSO 9 = GND 10 = TRIN 11 = TROUT 12 = POWOK 13 = EFMD 14 = GND 15 = ALFA 16 = LASWR
1504 16 1
1500 14 1
1500-1 = INSEL 2 = CRI 3 = AM 4 = QCL 5 = GND 6 = QDA 7 = DSSY 8 = QRA 9 = MSC 10 = EMPH 11 = DEFS 12 = MUTE 13 = ATT 14 = GND 15 = +5V
1505-1 = DSEL 2 = DACK 3 = DCLK 4 = GND 5 = DDIN 6 = DDOUT 7 = IR
1505 1 7
X26
L3
D4
D7
D5
P10
S11
W12
C8
A DAC
JD51 1 7
JD51-1 = −15V 2 = RIGHT 3 = GND 4 = +5V 5 = GND 6 = +15V 7 = LEFT
JD50-1 = EMPA 2 = +5V 3 = MUSB 4 = ATT 5 = CLAB 6 = GND 7 = DAAB 8 = WSAB 9 = GND 10 = XSYS
JD50 10 1
D29
D28
H VAR. HEADPHONE
1580-1 = RSHP 2 = RGHP 3 = KILLC 4 = −15V 5 = GND 6 = +15V 7 = LGHP 8 = LSHP
1580 8 1
D1
C CONTROL & DISPLAY
1801-1 = IR 2 = DDOUT 3 = DDIN 4 = GND 5 = DCLK 6 = DACK 7 = DSEL
1801 1 7
1800-1 = VFIL2 2 = VFIL1 3 = +5V 4 = KL 5 = VFTD 6 = DRST 7 = GND
1800 1 7
E8
P9
D DECODER
1152-1 = RHI 2 = GND 3 = MUTE 4 = GND 5 = LHI
1152 1 5
1150-1 = LHI 2 = LG 3 = +15V 4 = GND 5 = −15V 6 = KILLC 7 = RG 8 = RHI
1151-1 = −15V 2 = RCH(+) 3 = GND 4 = +5V 5 = GND 6 = +15V 7 = LCH(+)
1150 8 1
1190 7 1
1151 1 7
1190-1 = LDL 2 = SSEL 3 = +15V 4 = GND 5 = −15V 6 = KILL 7 = LDR
1141-1 = XSYS 2 = GND 3 = WSAB 4 = DAAB 5 = GND 6 = KILLC 7 = ATT 8 = MUSB 9 = +5V 10 = EMPA
1141 1 10
1230-1 = MSTCK 2 = GND 3 = DATA 4 = GND 5 = WS 6 = GND 7 = CL 8 = GND 9 = XSYS2 10 = GND
1230 1 10
1090-1 = INSEL 2 = CRI 3 = AM 4 = QCL 5 = GND 6 = QDA 7 = DSSY2 8 = QRA 9 = MSC 10 = EMPH 11 = DEFS 12 = MUTE 13 = ATT 14 = GND 15 = +5V
1090 1 15
1091-1 = HF 2 = GND 3 = HFD 4 = GND
1091 1 4
X25
H1
E7
A29
A28
E4
E5
W6
MDA.03047
T28/141

POWER SUPPLY CIRCUIT DIAGRAM


AC1
AC2
D22 1N4002
D21 1N4002
Q3 BC550C
Q4 BC560C
Q2 BC550C
Q1 BC550C
Q7 BC550C
Q5 BC550C
R38 3K9
DV2 3.9V
C28 1000u
R41 10K
R42 150K
R24 56K
R65 22K
R64 470K
KILL
+5V
-15V
KL
D19 1N4448
R31 4K7
R32 5M6
D17 1N4448
R33 4K7
C19 100n
C24 470n
D24 1N4448
D32 1N4448
D23 1N4002
D20 1N4002
C34 1000u
IC10 MC34160
THERMAL SHUTDOWN
2.6V REF
IH On/Off
D33 1N4448
R46 22K
C35 22n
C31 47u
C62 2u2
RESET
TP7
VB+5
OFF
R45 47K
R44 22K
R48 22K
R47 4K7
DV3 4.7V
R43 10K
C36 4u7
55
J1
VFIL1
VFIL2
VFTD
DV1 9.1V
R4 3K9
D35 1N4002
S11 LM337KC
TP1
D2 1N4002
D1 1N4002
C1 470u
R67 1K2
R66 24K
D34 1N4002
C60 22n
C61 100u
C2 1000u
GN1
R29 1.6A
R30 1.6A
DZ2 3.3A/80V
C32 4700u
C33 4700u
C20 4700u
GN2
R27 0.75A
R28 0.75A
DZ1 2.2A/80V
TP13
+20V
GN3
C22 4700u
C21 4700u
D4 1N4002
IC5 LM317SP
R14 100R
R8 68R
R9 680R
D12 1N4002
C7 22n
C8 100u
TP6
+9V
GN6
D15 1N4002
IC4 LM317SP
R13 220R
R7 1K5
D11 1N4002
C13 22n
C14 100u
TP10
+10V
GN7
D6 1N4002
IC6 LM317SP
R15 100R
R16 1K
D13 1N4002
C9 22n
C10 100u
TP3
+15V
R17 100R
GN4
D7 1N4002
IC7 LM337KC
R18 100R
R22 1K
D14 1N4002
C11 22n
C12 100u
TP2
-15V
R21 100R
GN5
D9 1N4002
IC8 LM337KC
R25 220R
R26 680R
D16 1N4002
C15 22n
C16 100u
TP11
-5V
GN8
D5 1N4002
IC3 LM337KC
R12 100R
R5 680R
R6 68R
D10 1N4002
C5 22n
C6 100u
TP5
-9V
GN9
D3 1N4002
IC2 LM337KC
R11 220R
R20 1K5
D8 1N4002
C3 22n
C4 100u
TP4
-10V
GN10
TP8
TP12
GND
R40 0R
GN1. . .TO. . .GN21
OF-STARPOINT-GND
GN12
C18 1000u
C17 22n
L1 250uH
TP9
D18 1N5822
C23 100u
L2 72uH
R34 100K
R35 4K3
C26 2n2
R36 15K
C29 390p
C27 33n
IC9 L296
COMP
PWM
SAWTOOTH OSCILLATOR
0,4V
OUTPUT STAGE
5,1V REFERENCE
ERROR AMPL
+5,1V
CROWBAR
THERMAL SHUTDOWN
RESET
R37 10K
DRST
C30 100n
C25 2u2
GN11
GND P1 1
GN13
+15V P1 2
-15V P1 3
KILL P1 4
GND P1 5
GN14
+5V P1 6
+20V P1 7
GND P2 1
GN15
DRST P2 2
VFTD P2 3
KL P2 4
+5V P2 5
VFIL1 P2 6
VFIL2 P2 7
-9V P3 1
+9V P3 2
GND P3 3
GN17
-10V P3 4
+10V P3 5
GND P3 6
GN18
-5V P3 7
+5V P3 8
GND P3 9
GN19
+5V P4 1
GND P4 2
GN20
VB+5 P4 3
OFF P4 4
RESET P4 5
KILL P4 6
-15V P4 7
GND P4 8
GN21
+15V P4 9
1
2
3
4
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A
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I
J
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M
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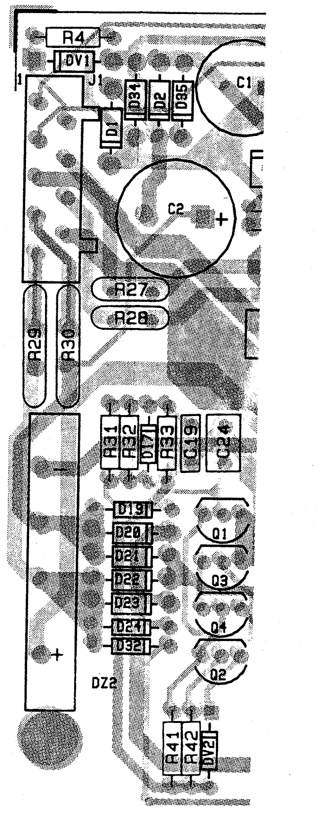
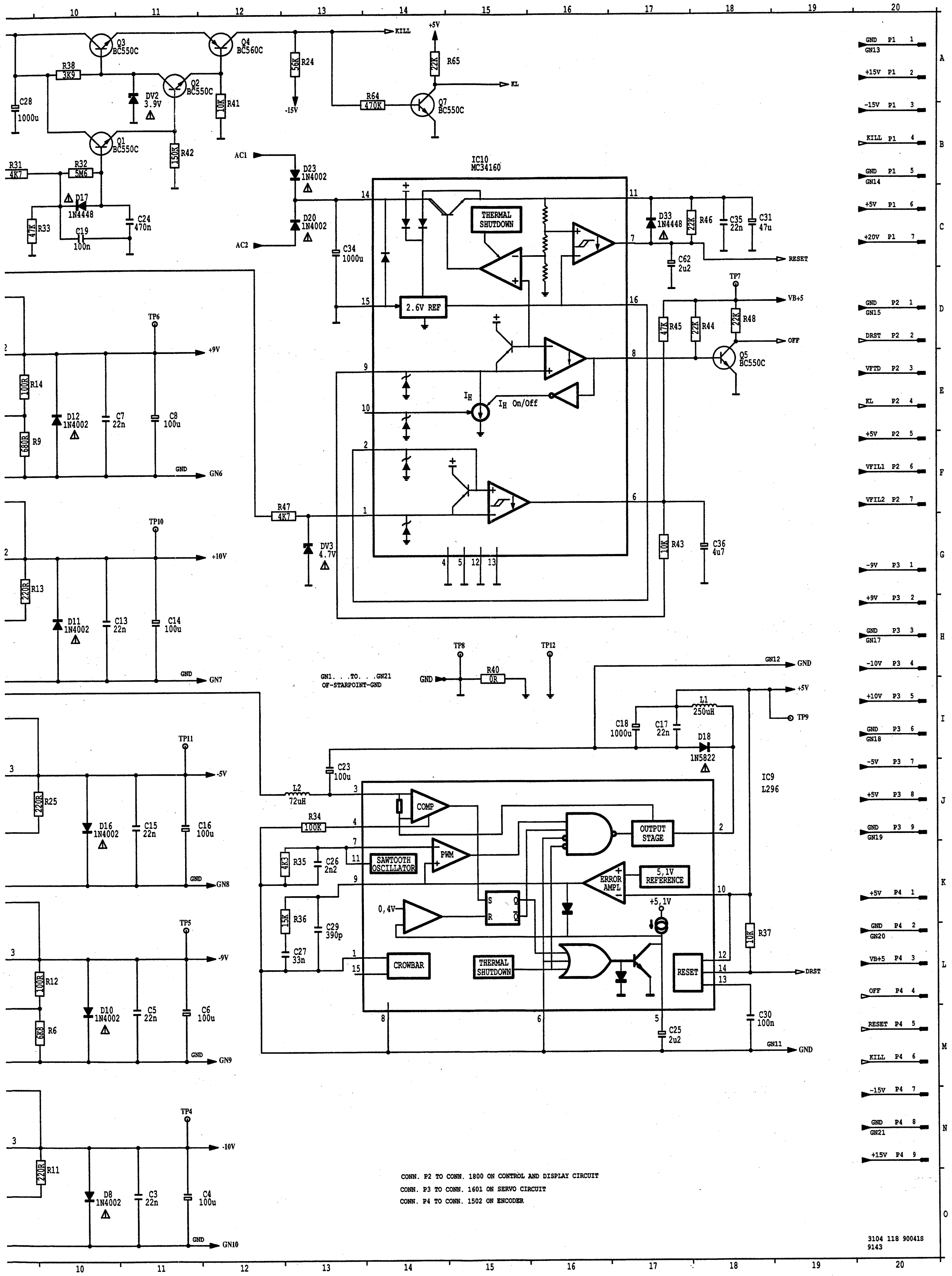
O

CONN. P2 TO CONN. 1800 ON CONTROL AND DISPLAY CIRCUIT
CONN. P3 TO CONN. 1601 ON SERVO CIRCUIT
CONN. P4 TO CONN. 1502 ON ENCODER

3104 118 90041S
9143

55	B 1
C1	C 4
C2	C 3
C3	O11
C4	O12
C5	M11
C6	L12
C7	E11
C8	E11
C9	L 5
C10	L 6
C11	N 5
C12	N 6
C13	H11
C14	H11
C15	J11
C16	J12
C17	I17
C18	I17
C19	C10
C20	F 6
C21	I 5
C22	I 4
C23	J13
C24	C11
C25	M17
C26	K13
C27	L13
C28	A 9
C29	L13
C30	M18
C31	C18
C32	E 6
C33	E 7
C34	C13
C35	C18
C36	G18
C60	C 6
C61	C 7
C62	C17
D1	C 4
D2	B 4
D3	M 9
D4	D 9
D5	K 8
D6	J 3
D7	M 3
D8	O10
D9	I 9
D10	M10
D11	H10
D12	E10
D13	K 5
D14	N 5
D15	F 9
D16	J10
D17	C10
D18	I18
D19	B 8
D20	C13
D21	A 8
D22	A 8
D23	B13
D24	C 8
D32	C 8
D33	C17
D34	C 6
D35	A 5
DV1	B 3
DV2	A11
DV3	G13
DZ1	H 4
DZ2	F 4
IC2	N 9
IC3	K 9
IC4	G 9
IC5	D 9
IC6	J 3
IC7	M 3
IC8	I 9
IC9	J18
IC10	B15
J1	H 1
J1	G 1
J1	G 1
J1	F 1
J1	F 1
J1	E 1
J1	B 1
J1	B 1
J1	B 1
L1	I18
L2	J13
P1	A20
P1	C20
P1	C20
P1	B20
P1	B20
P1	B20
P1	A20
P2	F20
P2	F20
P2	E20
P2	E20
P2	E20
P2	D20
P2	D20
P3	J20
P3	J20
P3	I20
P3	I20
P3	I20
P3	H20
P3	H20
P3	G20
P3	G20
P4	M20
P4	L20
P4	L20
P4	K20
P4	K20
P4	N20
P4	N20
P4	M20
P4	M20
Q1	B11
Q2	A11
Q3	A11
Q4	A12
Q5	E18
Q7	A14
R4	B 3
R5	M 9
R6	M10
R7	H 9
R8	F 9
R9	F10
R11	N10
R12	L10
R13	G10
R14	E10
R15	K 4
R16	L 3
R17	L 4
R18	N 4
R20	O 9
R21	O 4
R22	O 3
R24	A13
R25	J10
R26	K 9
R27	G 2
R28	H 2
R29	E 2
R30	F 2
R31	B 9
R32	B10
R33	C10
R34	J13
R35	K13
R36	K13
R37	L18
R38	A10
R40	H15
R41	A12
R42	B11
R43	G17
R44	D18
R45	D17
R46	C18
R47	F13
R48	D18
R64	A14
R65	A15
R66	C 5
R67	C 5
S11	A 5
TP1	A 6
TP2	M 6
TP3	J 6
TP4	N11
TP5	K11
TP6	D11
TP7	D18
TP8	H15
TP9	I19
TP10	G11
TP11	I11
TP12	H16
TP13	G 5


R4
DV1
J1
D34
D2
D35
D1
C1
C2
R27
R28
R29
R30
R31
R32
D17
R33
C19
C24
D19
D20
D21
D22
D23
D24
D32
Q1
Q3
Q4
Q2
DZ2
R41
R42
DV2


10
11
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19
20
A
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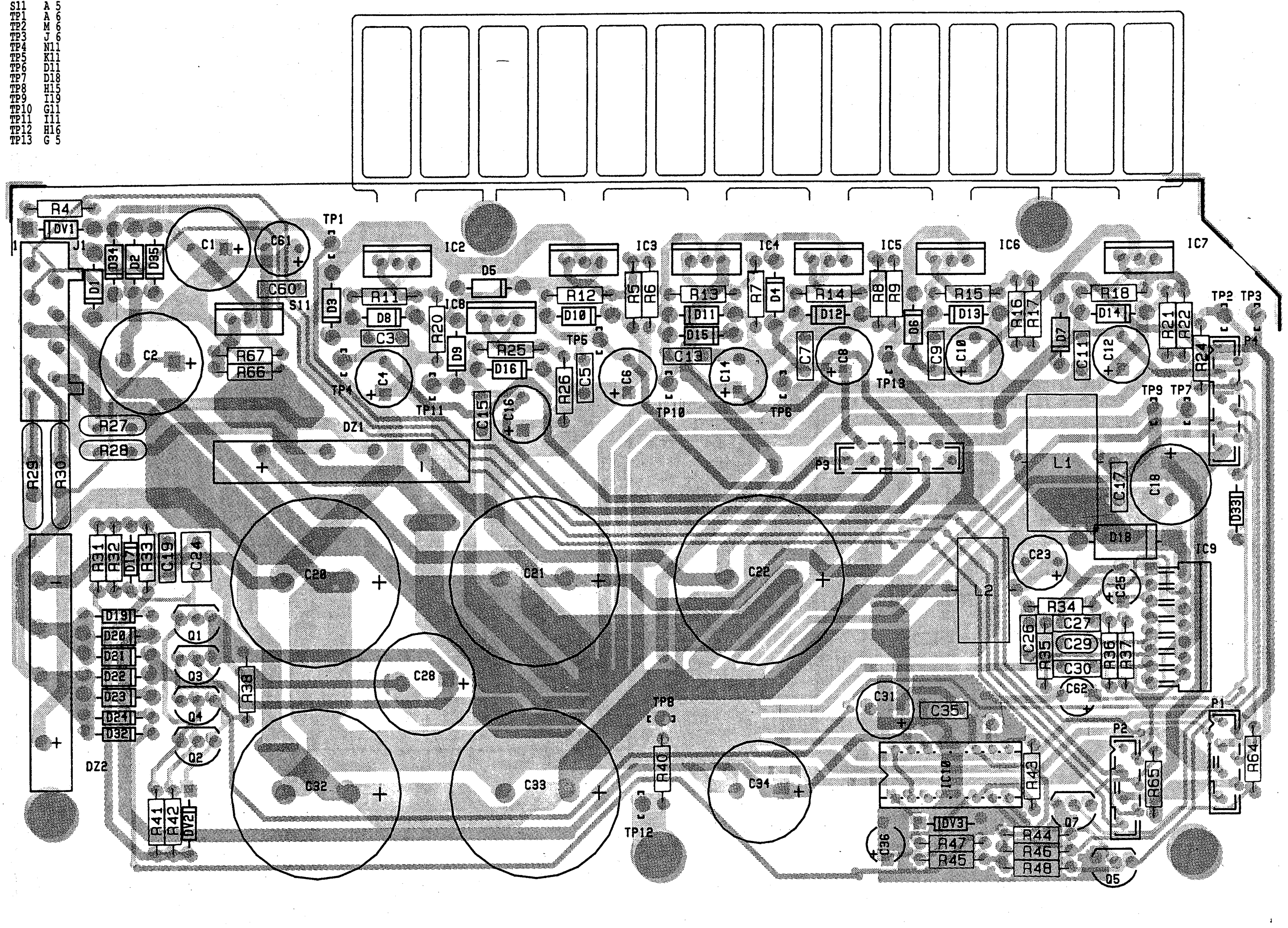
G
H
I
J
K
L
M
N
O
Q3 BC550C
Q4 BC560C
Q2 BC550C
Q1 BC550C
Q7 BC550C
Q5 BC550C
R38 3K9
DV2 3.9V
C28 1000u
R41 10K
R42 150K
R31 4K7
R32 5M6
D17 1N4448
R33 47K
C19 100n
C24 470n
R24 56K
R65 22K
R64 470K
KILL
KL
+5V
-15V
AC1
AC2
D23 1N4002
D20 1N4002
C34 1000u
IC10 MC34160
THERMAL SHUTDOWN
2.6V REF
I_H
I_H On/Off
D33 1N4448
R46 22K
C35 22n
C31 47u
C62 2u2
RESET
TP7
VB+5
R45 47K
R44 22K
R48 22K
OFF
R47 4K7
DV3 4.7V
R43 10K
C36 4u7
TP6
R14 100R
R9 680R
D12 1N4002
C7 22n
C8 100u
+9V
GN6
TP10
R13 220R
D11 1N4002
C13 22n
C14 100u
+10V
GN7
TP8
TP12
R40 0R
GND
GN1. . .TO. . .GN21
OF-STARPOINT-GND
GN12
+5V
TP9
C18 1000u
C17 22n
L1 250uH
D18 1N5822
C23 10u
L2 72uH
IC9 L296
COMP
OUTPUT STAGE
R34 100K
PWM
SAWTOOTH OSCILLATOR
R35 4K3
C26 2n2
ERROR AMPL
5.1V REFERENCE
+5.1V
0.4V
R36 15K
C29 390p
C27 33n
CROWBAR
THERMAL SHUTDOWN
RESET
R37 10K
DRST
C25 2u2
C30 100n
GN11
TP11
R25 220R
D16 1N4002
C15 22n
C16 100u
-5V
GN8
TP5
R12 100R
R6 6K8
D10 1N4002
C5 22n
C6 100u
-9V
GN9
TP4
R11 220R
D8 1N4002
C3 22n
C4 100u
-10V
GN10
GND P1 1
GN13
+15V P1 2
-15V P1 3
KILL P1 4
GND P1 5
GN14
+5V P1 6
+20V P1 7
GND P2 1
GN15
DRST P2 2
VFTD P2 3
KL P2 4
+5V P2 5
VFIL1 P2 6
VFIL2 P2 7
-9V P3 1
+9V P3 2
GND P3 3
GN17
-10V P3 4
+10V P3 5
GND P3 6
GN18
-5V P3 7
+5V P3 8
GND P3 9
GN19
+5V P4 1
GND P4 2
GN20
VB+5 P4 3
OFF P4 4
RESET P4 5
KILL P4 6
-15V P4 7
GND P4 8
GN21
+15V P4 9

CONN. P2 TO CONN. 1800 ON CONTROL AND DISPLAY CIRCUIT
CONN. P3 TO CONN. 1601 ON SERVO CIRCUIT
CONN. P4 TO CONN. 1502 ON ENCODER

3104 118 90041S
9143

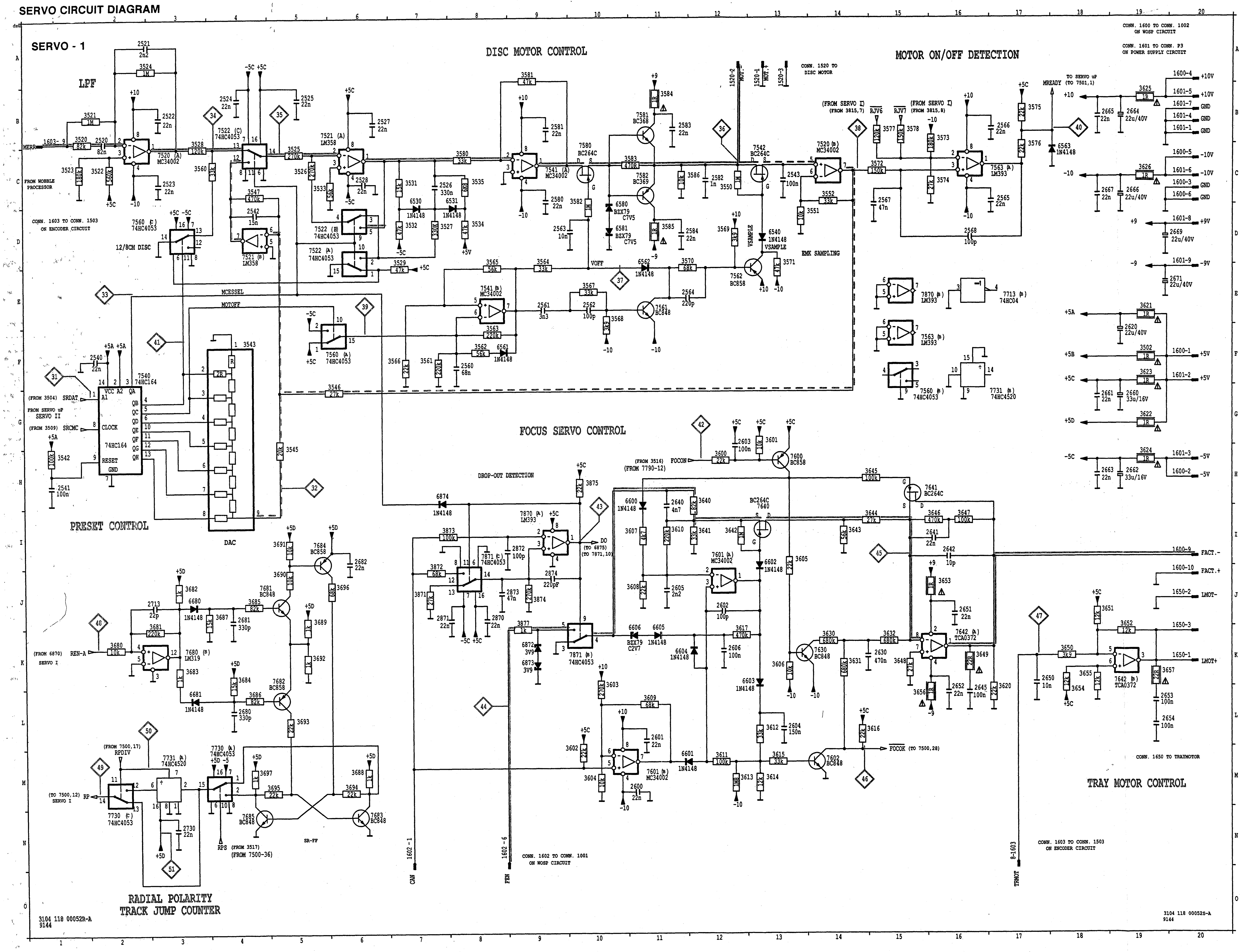
55	B 1
C1	C 4
C2	C 3
C3	O11
C4	O12
C5	M11
C6	L12
C7	E11
C8	E11
C9	L 5
C10	L 6
C11	N 5
C12	N 6
C13	H11
C14	H11
C15	J11
C16	J12
C17	I17
C18	I17
C19	C10
C20	F 6
C21	I 5
C22	I 4
C23	J13
C24	C11
C25	M17
C26	K13
C27	L13
C28	A 9
C29	L13
C30	M18
C31	C18
C32	E 6
C33	E 7
C34	C13
C35	C18
C36	G18
C60	C 6
C61	C 7
C62	C17
D1	C 4
D2	B 4
D3	M 9
D4	D 9
D5	K 8
D6	J 3
D7	M 3
D8	O10
D9	I 9
D10	M10
D11	H10
D12	E10
D13	K 5
D14	N 5
D15	F 9
D16	J10
D17	C10
D18	I18
D19	B 8
D20	C13
D21	A 8
D22	A 8
D23	B13
D24	C 8
D32	C 8
D33	C17
D34	C 6
D35	A 5
DV1	B 3
DV2	A11
DV3	G13
DZ1	H 4
DZ2	F 4
IC2	N 9
IC3	K 9
IC4	G 9
IC5	D 9
IC6	J 3
IC7	M 3
IC8	I 9
IC9	J18
IC10	B15
J1	H 1
J1	G 1
J1	G 1
J1	F 1
J1	F 1
J1	E 1
J1	B 1
J1	B 1
J1	B 1
L1	I18
L2	J13
P1	A20
P1	C20
P1	C20
P1	B20
P1	B20
P1	B20
P1	A20
P2	F20
P2	F20
P2	E20
P2	E20
P2	E20
P2	D20
P2	D20
P3	J20
P3	J20
P3	I20
P3	I20
P3	I20
P3	H20
P3	H20
P3	G20
P3	G20
P4	M20
P4	L20
P4	L20
P4	K20
P4	K20
P4	N20
P4	N20
P4	M20
P4	M20
Q1	B11
Q2	A11
Q3	A11
Q4	A12
Q5	E18
Q7	A14
R4	B 3
R5	M 9
R6	M10
R7	H 9
R8	F 9
R9	F10
R11	N10
R12	L10
R13	G10
R14	E10
R15	K 4
R16	L 3
R17	L 4
R18	N 4
R20	O 9
R21	O 4
R22	O 3
R24	A13
R25	J10
R26	K 9
R27	G 2
R28	H 2
R29	E 2
R30	F 2
R31	B 9
R32	B10
R33	C10
R34	J13
R35	K13
R36	K13
R37	L18
R38	A10
R40	H15
R41	A12
R42	B11
R43	G17
R44	D18
R45	D17
R46	C18
R47	F13
R48	D18
R64	A14
R65	A15
R66	C 5
R67	C 5
S11	A 5
TP1	A 6
TP2	M 6
TP3	J 6
TP4	N11
TP5	K11
TP6	D11
TP7	D18
TP8	H15
TP9	I19
TP10	G11
TP11	I11
TP12	H16
TP13	G 5

POWER SUPPLY PANEL

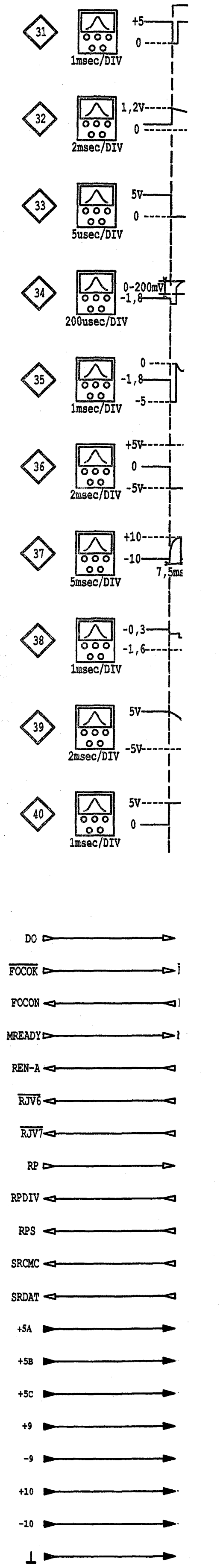

R4
DV1
J1
D1
D34
D2
D35
C1
C61
TP1
C60
S11
IC2
D5
IC3
IC4
IC5
IC6
IC7
R11
R12
R13
R14
R15
R18
D3
D8
C3
R20
IC8
D10
R5
R6
D11
D15
R7
D4
D12
R8
R9
D6
D13
R16
R17
D7
D14
R21
R22
TP2
TP3
C2
R67
R66
TP4
C4
D9
R25
D16
TP5
C5
R26
C6
C13
C14
C7
C8
C9
C10
C11
C12
R24
P4
TP9
TP7
TP11
C15
C16
TP10
TP6
TP13
R27
R28
DZ1
P3
L1
C17
C18
R29
R30
D33
R31
R32
D17
R33
C19
C24
C20
C21
C22
D18
IC9
C23
L2
R34
C25
C27
C26
C29
R35
C30
R36
R37
C62
D19
D20
D21
D22
D23
D24
D32
Q1
Q3
Q4
Q2
R38
C28
C31
C35
TP8
P2
P1
DZ2
C32
C33
R40
C34
IC10
R48
R65
R64
R41
R42
DV2
TP12
C36
DV3
R47
R45
R44
R46
Q7
Q5

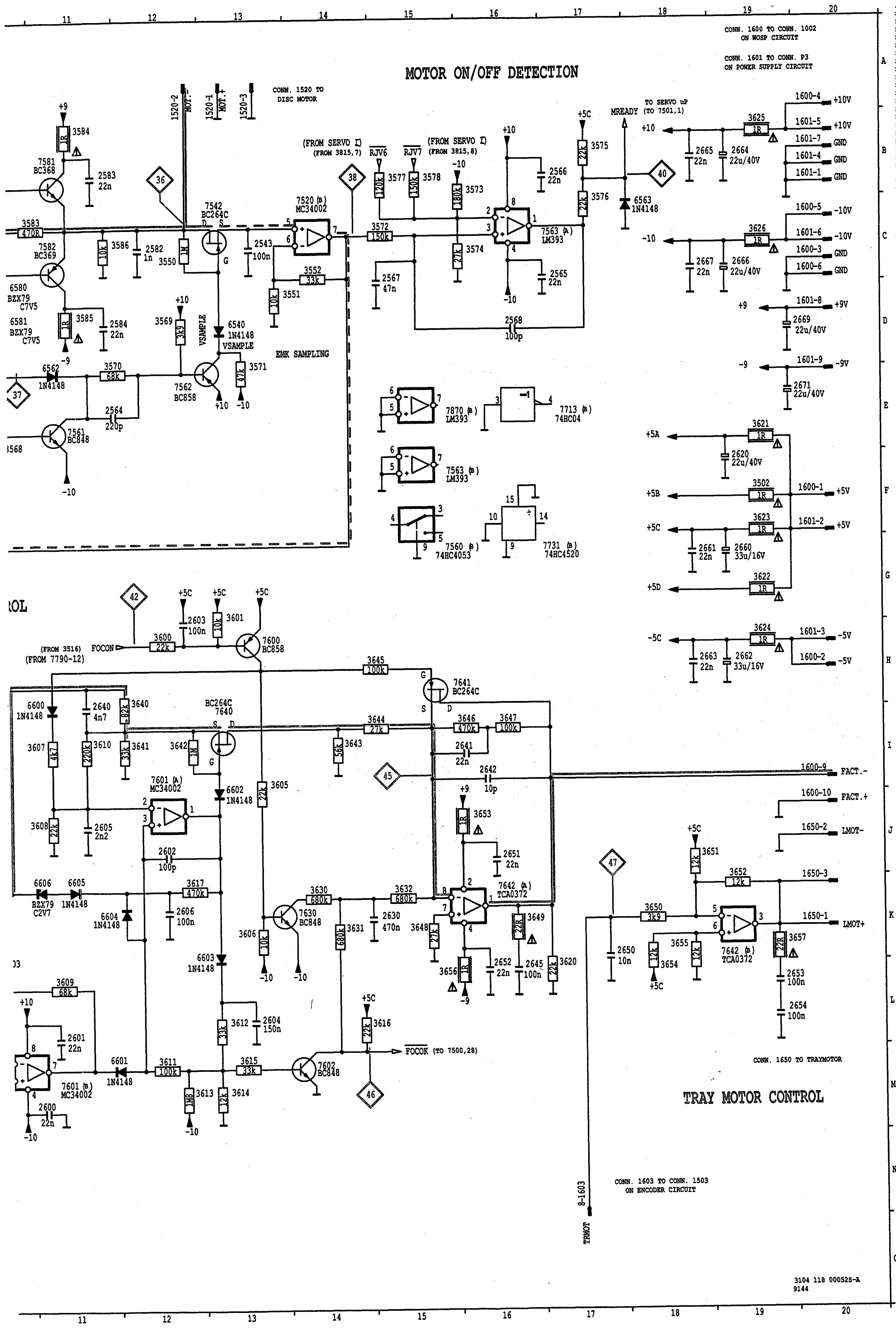
MZ 3078

SERVO CIRCUIT DIAGRAM


SERVO - 1
LPF
DISC MOTOR CONTROL
MOTOR ON/OFF DETECTION
FOCUS SERVO CONTROL
DROP-OUT DETECTION
PRESET CONTROL
DAC
RADIAL POLARITY
TRACK JUMP COUNTER
TRAY MOTOR CONTROL
EMK SAMPLING
SR-FF
CONN. 1600 TO CONN. 1002 ON WOSP CIRCUIT
CONN. 1601 TO CONN. P3 ON POWER SUPPLY CIRCUIT
CONN. 1520 TO DISC MOTOR
CONN. 1603 TO CONN. 1503 ON ENCODER CIRCUIT
CONN. 1602 TO CONN. 1001 ON WOSP CIRCUIT
CONN. 1650 TO TRAYMOTOR
FROM WOBBLE PROCESSOR
MERR
12/8CM DISC
MCESSEL
MOTOFF
VOFF
VSAMPLE
MREADY (TO SERVO uP (TO 7501,1)
(FROM SERVO I) (FROM 3815,7)
(FROM SERVO I) (FROM 3815,8)
RJV6
RJV7
(FROM 3504) SRDAT
FROM SERVO uP SERVO II
(FROM 3509) SRCMC
(FROM 3516) FOCON
(FROM 7790-12)
DO (TO 6875) (TO 7871,10)
FOCOK (TO 7500,28)
(FROM 6870) SERVO I REN-A
(FROM 7500,17) RPDIV
(TO 7500,12) SERVO I RP
RPS (FROM 3517) (FROM 7500-36)
FACT.-
FACT.+
LMOT-
LMOT+
CAN
FEN
TRMOT
7520 (A) MC34002
7520 (B) MC34002
7521 (A) LM358
7521 (B) LM358
7522 (A) 74HC4053
7522 (B) 74HC4053
7522 (C) 74HC4053
7540 74HC164
7541 (A) MC34002
7541 (B) MC34002
7542 BC264C
7560 (A) 74HC4053
7560 (B) 74HC4053
7560 (C) 74HC4053
7561 BC848
7562 BC858
7563 (A) LM393
7563 (B) LM393
7580 BC264C
7581 BC368
7582 BC369
7600 BC858
7601 (A) MC34002
7601 (B) MC34002
7602 BC848
7630 BC848
7640 BC264C
7641 BC264C
7642 (A) TCA0372
7642 (B) TCA0372
7680 (B) LM319
7681 BC848
7682 BC858
7683 BC848
7684 BC858
7685 BC848
7713 (B) 74HC04
7730 (A) 74HC4053
7730 (C) 74HC4053
7731 (A) 74HC4520
7731 (B) 74HC4520
7870 (A) LM393
7870 (B) LM393
7871 (B) 74HC4053
7871 (C) 74HC4053
3104 118 00052R-A 9144
3104 118 00052S-A 9144

1520	B12
1520	B13
1520	B13
1600	J20
1600	I20
1600	H20
1600	F20
1600	C20
1600	C20
1600	C20
1600	A20
1601	H20
1601	F20
1601	D20
1601	D20
1601	C20
1601	B20
1601	B20
1601	B20
1601	B20
1602	N 7
1602	N 8
1603	B 1
1603	N17
1650	K20
1650	K20
1650	J20
2520	B 2
2521	A 2
2522	B 3
2523	C 3
2524	B 4
2525	B 5
2526	C 7
2527	B 6
2528	C 6
2540	F 2
2541	H 1
2542	D 4
2543	C13
2560	F 8
2561	E 9
2562	E10
2563	D 9
2564	E12
2565	C17
2566	B17
2567	C15
2568	D16
2580	C 9
2581	B 9
2582	C12
2583	B11
2584	D12
2600	M11
2601	L11
2602	J12
2603	G12
2604	L13
2605	J11
2606	K12
2620	F19
2630	K15
2640	H11
2641	I16
2642	I16
2645	L16
2650	K17
2651	J16
2652	L16
2653	L19
2654	L20
2660	G19
2661	G18
2662	H19
2663	H18
2664	B19
2665	B18
2666	C19
2667	C18
2669	D20
2671	E20
2680	L 4
2681	J 4
2682	I 6
2713	J 3
2730	N 3
2870	J 8
2871	J 7
2872	I 9
2873	J 9
2874	J 9
3502	F19
3520	B 1
3521	B 2
3522	C 2
3523	C 1
3524	A 3
3525	C 5
3526	C 5
3527	D 7
3528	B 3
3529	D 7
3531	C 7
3532	D 7
3533	C 5
3534	D 8
3535	C 8
3542	H 1
3543	F 4
3545	H 5
3546	G 6
3547	C 4
3550	C12
3551	D14
3552	C14
3560	C 3
3561	F 7
3562	F 8
3563	F 8
3564	D 9
3565	D 8
3566	F 7
3567	E10
3568	E10
3569	D12
3570	D12
3571	D13
3572	C15
3573	B16
3574	C16
3575	B17
3576	C17
3577	B15
3578	B15
3580	C 8
3581	A 9
3582	C10
3583	C11
3584	B11
3585	D11
3586	C12
3600	H12
3601	G13
3602	M10
3603	K10
3604	M10
3605	I13
3606	K13
3607	I11
3608	J11
3609	L11
3610	I11
3611	M12
3612	L13
3613	M12
3614	M13
3615	M13
3616	L15
3617	K12
3620	L17
3621	E19
3622	G19
3623	F19
3624	H19
3625	B19
3626	C19
3630	K14
3631	K14
3632	K15
3640	H12
3641	I12
3642	I12
3643	I14
3644	I15
3645	H15
3646	I16
3647	I16
3648	K15
3649	K16
3650	K18
3651	J18
3652	K19
3653	J16
3654	L18
3655	K18
3656	L15
3657	K20
3680	K 2
3681	J 3
3682	J 3
3683	K 3
3684	K 4
3685	J 4
3686	L 4
3687	J 4
3688	M 6
3689	J 5
3690	J 5
3691	I 5
3692	K 5
3693	L 5
3694	M 6
3695	M 5
3696	J 6
3697	M 4
3871	J 7
3872	J 7
3873	I 8
3874	J 9
3875	H10
3877	J 9
6530	C 7
6531	C 8
6540	D13
6561	F 8
6562	D11
6563	C18
6580	D10
6581	D10
6600	H11
6601	M11
6602	I13
6603	K13
6604	K11
6605	J11
6606	K11
6680	J 3
6681	L 3
6872	K 9
6873	K 9
6874	H 7
7520	B14
7521	D 4
7522	D 5
7522	D 6
7540	F 2
7541	E 8
7542	C13
7560	F 5
7560	D 2
7560	G16
7561	E11
7562	E12
7563	F15
7563	C17
7580	B10
7581	B11
7582	C11
7600	H13
7601	M11
7601	I12
7602	M14
7630	K14
7640	H13
7641	H16
7642	K16
7642	K19
7680	K 3
7681	J 4
7682	K 5
7683	N 6
7684	I 5
7685	N 4
7713	E17
7730	N 2
7730	L 4
7731	M 3
7731	G17
7870	I 9
7870	E15
7871	I 8
7871	K10


31
1msec/DIV
+5
0
32
1,2V
0
2msec/DIV
33
5V
0
5usec/DIV
34
0-200mV
-1,8
200usec/DIV
35
0
-1,8
-5
1msec/DIV
36
+5V
0
-5V
2msec/DIV
37
+10
-10
7,5ms
5msec/DIV
38
-0,3
-1,6
1msec/DIV
39
5V
-5V
2msec/DIV
40
5V
0
1msec/DIV
DO
FOCOK
FOCON
MREADY
REN-A
RJV6
RJV7
RP
RPDIV
RPS
SRCMC
SRDAT
+5A
+5B
+5C
+9
-9
+10
-10


MOTOR ON/OFF DETECTION
TRAY MOTOR CONTROL
CONN. 1520 TO DISC MOTOR
CONN. 1600 TO CONN. 1002 ON HOSP CIRCUIT
CONN. 1601 TO CONN. P3 ON POWER SUPPLY CIRCUIT
CONN. 1650 TO TRAYMOTOR
CONN. 1603 TO CONN. 1503 ON ENCODER CIRCUIT
EMK SAMPLING
VSAMPLE
(FROM SERVO I) (FROM 3815,7)
(FROM SERVO I) (FROM 3815,8)
RJV6
RJV7
TO SERVO uP (TO 7501,1)
MREADY
(FROM 3516) (FROM 7790-12) FOCON
FOCOK (TO 7500,28)
FACT.-
FACT.+
LMOT-
LMOT+
TRMOT
MOT.-
MOT.+
7520 (B) MC34002
7563 (A) LM393
7870 (B) LM393
7563 (B) LM393
7713 (B) 74HC04
7560 (B) 74HC4053
7731 (B) 74HC4520
7542 BC264C
7581 BC368
7582 BC369
7562 BC858
7561 BC848
7600 BC858
7641 BC264C
7640 BC264C
7601 (A) MC34002
7601 (B) MC34002
7630 BC848
7602 BC848
7642 (A) TCA0372
7642 (B) TCA0372
+10V
-10V
+9V
-9V
+5V
-5V
GND
+5A
+5B
+5C
+5D
-5C
11
12
13
14
15
16
17
18
19
20
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O

3104 118 00052S-A
9144

1520	B12
1520	B13
1520	B13
1600	J20
1600	I20
1600	H20
1600	F20
1600	C20
1600	C20
1600	C20
1600	A20
1601	H20
1601	F20
1601	D20
1601	D20
1601	C20
1601	B20
1601	B20
1601	B20
1601	B20
1602	N 7
1602	N 8
1603	B 1
1603	N17
1650	K20
1650	K20
1650	J20
2520	B 2
2521	A 2
2522	B 3
2523	C 3
2524	B 4
2525	B 5
2526	C 7
2527	B 6
2528	C 6
2540	F 2
2541	H 1
2542	D 4
2543	C13
2560	F 8
2561	E 9
2562	E10
2563	D 9
2564	E12
2565	C17
2566	B17
2567	C15
2568	D16
2580	C 9
2581	B 9
2582	C12
2583	B11
2584	D12
2600	M11
2601	L11
2602	J12
2603	G12
2604	L13
2605	J11
2606	K12
2620	F19
2630	K15
2640	H11
2641	I16
2642	I16
2645	L16
2650	K17
2651	J16
2652	L16
2653	L19
2654	L20
2660	G19
2661	G18
2662	H19
2663	H18
2664	B19
2665	B18
2666	C19
2667	C18
2669	D20
2671	E20
2680	L 4
2681	J 4
2682	I 6
2713	J 3
2730	N 3
2870	J 8
2871	J 7
2872	I 9
2873	J 9
2874	J 9
3502	F19
3520	B 1
3521	B 2
3522	C 2
3523	C 1
3524	A 3
3525	C 5
3526	C 5
3527	D 7
3528	B 3
3529	D 7
3531	C 7
3532	D 7
3533	C 5
3534	D 8
3535	C 8
3542	H 1
3543	F 4
3545	H 5
3546	G 6
3547	C 4
3550	C12
3551	D14
3552	C14
3560	C 3
3561	F 7
3562	F 8
3563	F 8
3564	D 9
3565	D 8
3566	F 7
3567	E10
3568	E10
3569	D12
3570	D12
3571	D13
3572	C15
3573	B16
3574	C16
3575	B17
3576	C17
3577	B15
3578	B15
3580	C 8
3581	A 9
3582	C10
3583	C11
3584	B11
3585	D11
3586	C12
3600	H12
3601	G13
3602	M10
3603	K10
3604	M10
3605	I13
3606	K13
3607	I11
3608	J11
3609	L11
3610	I11
3611	M12
3612	L13
3613	M12
3614	M13
3615	M13
3616	L15
3617	K12
3620	L17
3621	E19
3622	G19
3623	F19
3624	H19
3625	B19
3626	C19
3630	K14
3631	K14
3632	K15
3640	H12
3641	I12
3642	I12
3643	I14
3644	I15
3645	H15
3646	I16
3647	I16
3648	K15
3649	K16
3650	K18
3651	J18
3652	K19
3653	J16
3654	L18
3655	K18
3656	L15
3657	K20
3680	K 2
3681	J 3
3682	J 3
3683	K 3
3684	K 4
3685	J 4
3686	L 4
3687	J 4
3688	M 6
3689	J 5
3690	J 5
3691	I 5
3692	K 5
3693	L 5
3694	M 6
3695	M 5
3696	J 6
3697	M 4
3871	J 7
3872	J 7
3873	I 8
3874	J 9
3875	H10
3877	J 9
6530	C 7
6531	C 8
6540	D13
6561	F 8
6562	D11
6563	C18
6580	D10
6581	D10
6600	H11
6601	M11
6602	I13
6603	K13
6604	K11
6605	J11
6606	K11
6680	J 3
6681	L 3
6872	K 9
6873	K 9
6874	H 7
7520	B14
7521	D 4
7522	D 5
7522	D 6
7540	F 2
7541	E 8
7542	C13
7560	F 5
7560	D 2
7560	G16
7561	E11
7562	E12
7563	F15
7563	C17
7580	B10
7581	B11
7582	C11
7600	H13
7601	M11
7601	I12
7602	M14
7630	K14
7640	H13
7641	H16
7642	K16
7642	K19
7680	K 3
7681	J 4
7682	K 5
7683	N 6
7684	I 5
7685	N 4
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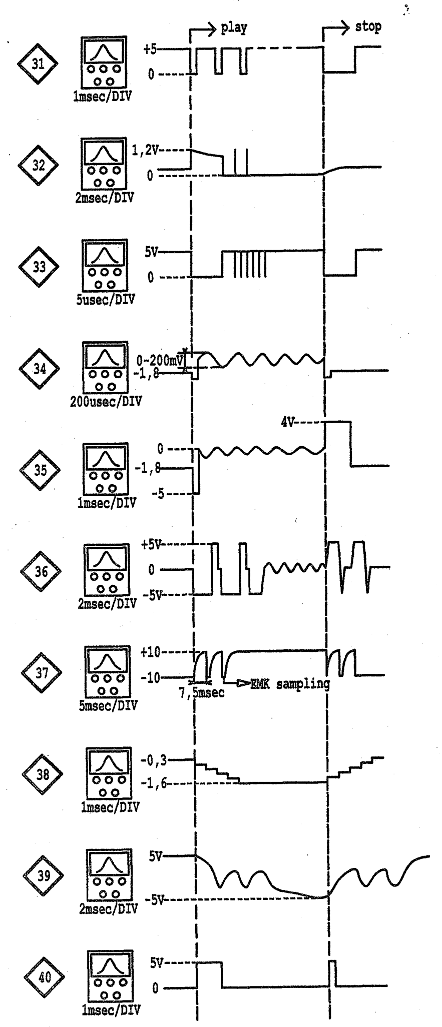
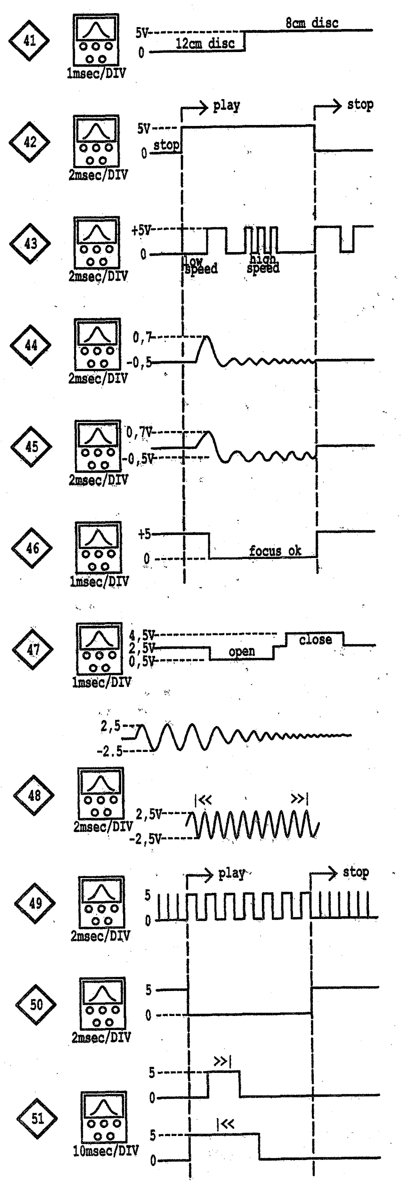
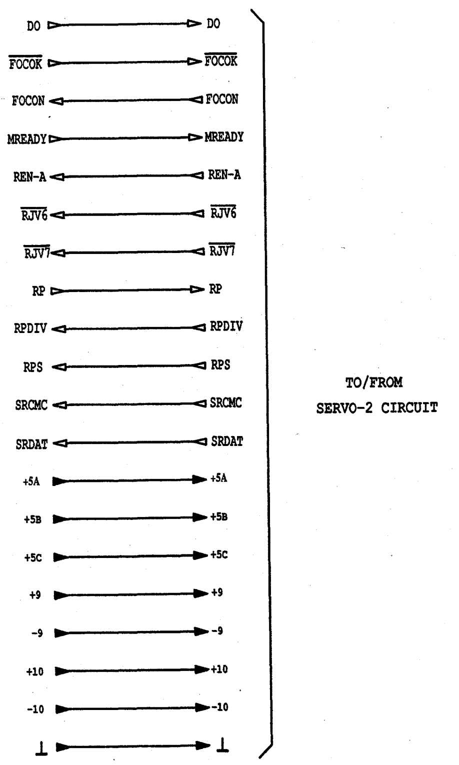
7730	L 4
7731	M 3
7731	G17
7870	I 9
7870	E15
7871	I 8
7871	K10





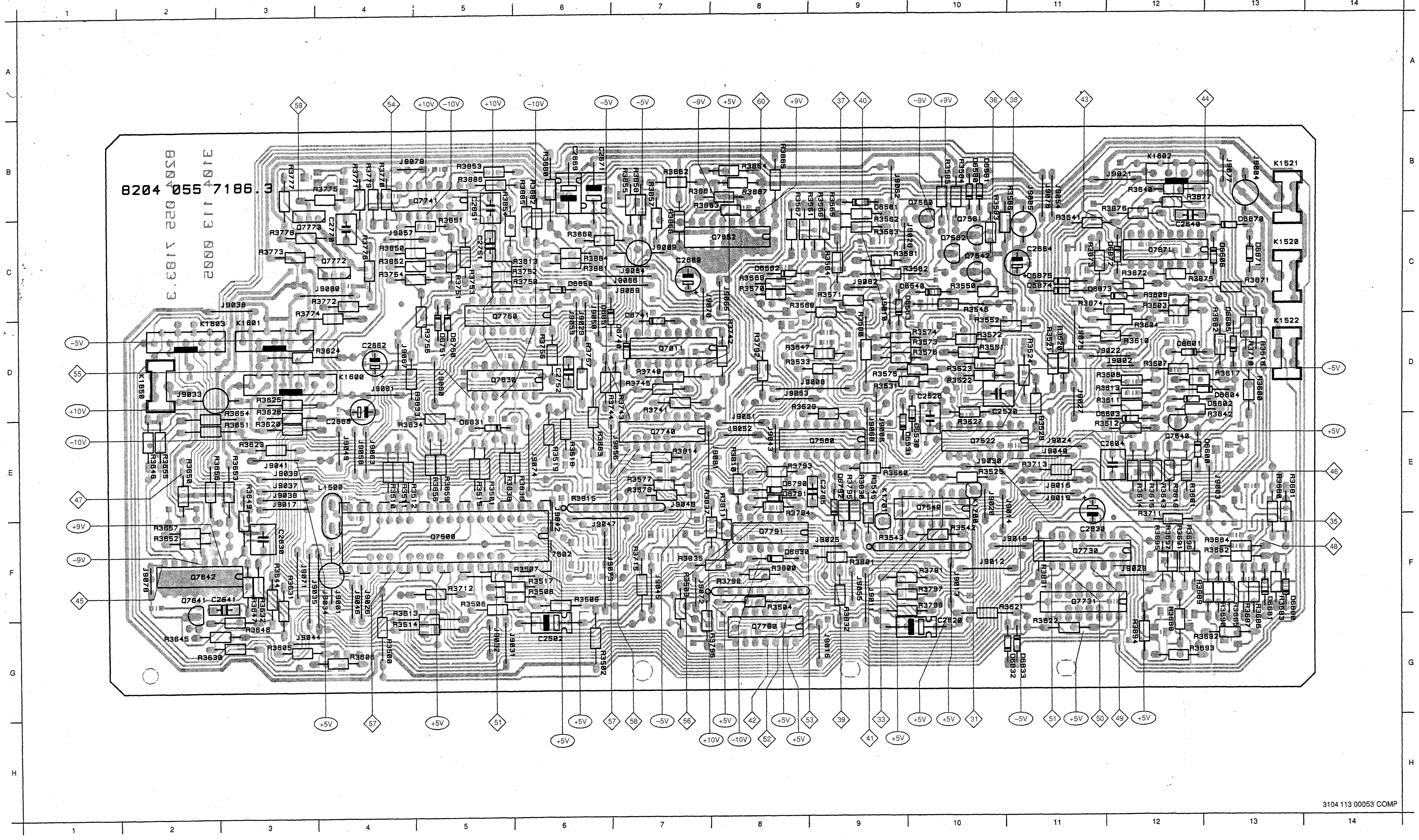

DO
FOCOK
FOCON
MREADY
REN-A
RJV6
RJV7
RP
RPDIV
RPS
SRCMC
SRDAT
+5A
+5B
+5C
+9
-9
+10
-10
⊥

TO/FROM
SERVO-2 CIRCUIT

SERVO-1

CAN	- Normalized CA Signal
DO	- Drop Out
FACT+ -	- Focus Actuator
FEN	- Focus Error Normalized
FOCOK	- In Focus Signal
FOCON	- Focus On
GND	- Ground
LMOT+ -	- Tray Motor
MERR	- Motor Control Error Signal
MOT+ -	- Disc Motor
MREADY	- Turntable Motor Ready
REN-A	- Radial Error Normalized A
RJV6-7	- Radial Jump Voltage
RP	- Radial Polarity
RPDIV	- Radial Polarity Divider
RPS	- Radial Polarity Select
SRCMC	- Shift Register Clock Motor Control
SRDAT	- Shift Register Data
TRMOT	- Tray Motor Control

SERVO PANEL COMPONENT SIDE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C
D
E
F
G
H
K1521
K1520
K1522
K1602
K1603
K1601
K1600
K1650
Q7642
Q7500
Q7760
Q7630
Q7811
Q7740
Q7560
Q7522
Q7791
Q7780
Q7730
Q7731
Q7671
Q7852
L1500
3104 113 00053 COMP

3104 113 00053 COMP

C2502	G6	J
C2520	E10	J
C2526	D10	J
C2604	E12	J
C2620	G10	J
C2630	F3	J
C2640	C12	J
C2641	F3	J
C2660	C7	J
C2662	D4	J
C2664	C11	J
C2666	E4	J
C2669	B6	J
C2671	B6	J
C2751	C5	J
C2752	D6	J
C2770	C4	J
C2795	E9	J
C2830	F11	J
C2851	B5	J
D6530	E10	J
D6531	E9	J
D6540	C10	J
D6561	B9	J
D6562	C8	J
D6563	C9	J
D6580	B10	J
D6581	B10	J
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D6601	D12	J
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D6603	E12	J
D6604	D13	J
D6605	D13	J
D6606	C13	J
D6680	F13	J
D6681	F13	J
D6740	D7	J
D6741	D7	J
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D6791	E8	J
D6792	E9	J
D6830	F8	J
D6831	E5	J
D6832	G11	J
D6833	G11	J
D6850	C6	J
D6851	D6	J
D6870	C13	J
D6871	C13	J
D6872	C12	J
D6873	C11	J
D6874	C11	J
D6875	C11	J
J9001	F4	J
J9002	D12	J
J9003	E13	J
J9004	B13	J
J9005	B11	J
J9006	E9	J
J9009	C7	J
J9010	C9	J
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J9013	F10	
J9014	F11	
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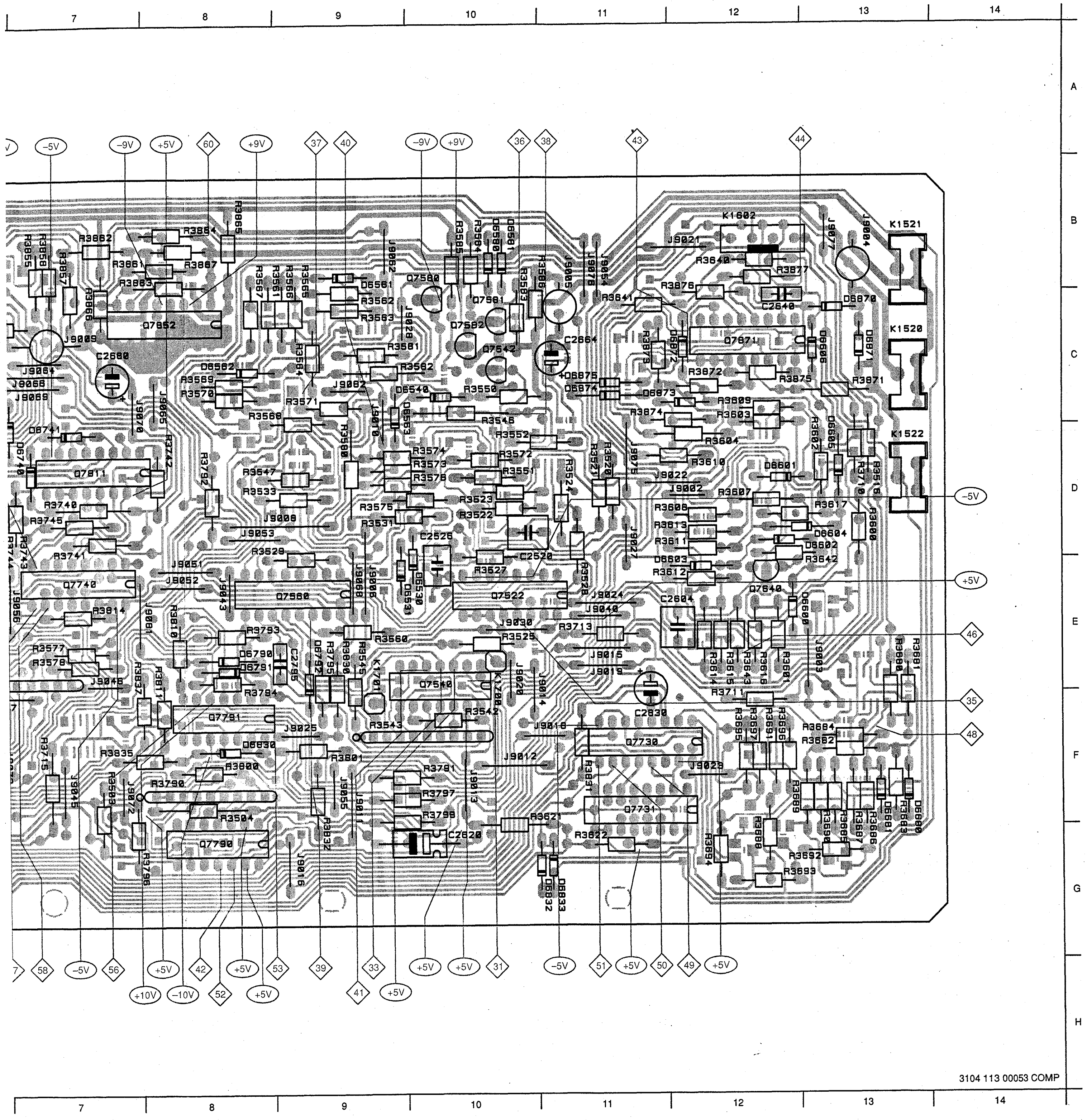
J9016	G9	



3104 113 00053 COMP

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C2526	D10	J9019	E11	K1522	D13	R3562	C9	R3652	F2	R3810	E8
C2604	E12	J9020	E10	K1600	D4	R3563	C9	R3653	E3	R3811	E8
C2620	G10	J9021	B12	K1601	D3	R3564	C9	R3654	D3	R3813	C6
C2630	F3	J9022	D11	K1602	B12	R3565	B9	R3655	E2	R3814	E7
C2640	C12	J9023	F12	K1603	D2	R3566	B9	R3657	F2	R3815	E6
C2641	F3	J9024	E11	K1650	D2	R3567	B8	R3658	E2	R3830	E9
C2660	C7	J9025	F9	K1700	E10	R3568	C8	R3669	F12	R3831	F11
C2662	D4	J9026	F4	K1701	E9	R3569	C8	R3681	E13	R3832	G9
C2664	C11	J9027	D11	L1500	E4	R3570	C8	R3682	F13	R3833	D5
C2666	E4	J9028	C10	Q7500	F5	R3571	C9	R3683	F13	R3834	E5
C2669	B6	J9029	D6	Q7522	E10	R3572	D10	R3684	F13	R3835	F7
C2671	B6	J9030	E10	Q7540	E10	R3573	D10	R3685	G13	R3836	E6
C2751	C5	J9031	G5	Q7542	C10	R3574	D10	R3686	G13	R3837	E7
C2752	D6	J9032	G5	Q7560	E9	R3575	D9	R3687	G13	R3838	E5
C2770	C4	J9033	D2	Q7580	B10	R3576	D10	R3688	G12	R3851	C5
C2795	E9	J9034	F4	Q7581	C10	R3577	E7	R3690	G13	R3852	C4
C2830	F11	J9035	F3	Q7582	C10	R3578	E7	R3691	F12	R3853	B5
C2851	B5	J9036	C3	Q7640	E12	R3580	D9	R3692	G13	R3854	B5
D6530	E10	J9037	E3	Q7641	F2	R3581	C9	R3693	G12	R3855	B7
D6531	E9	J9038	E3	Q7642	F2	R3581	B9	R3694	G12	R3856	E5
D6540	C10	J9039	E3	Q7730	F11	R3582	C10	R3695	F12	R3857	B7
D6561	B9	J9040	E11	Q7731	F11	R3583	C10	R3696	F12	R3858	B7
D6562	C8	J9041	E3	Q7740	E7	R3584	B10	R3697	F12	R3859	E5
D6563	C9	J9042	F6	Q7741	B5	R3585	B10	R3710	D13	R3860	C6
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D6581	B10	J9044	G3	Q7772	C4	R3600	E13	R3712	F5	R3862	B7
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D6602	D13	J9047	F6	Q7791	F8	R3601	E12	R3740	D7	R3865	B8
D6603	E12	J9048	E7	Q7811	D7	R3602	D13	R3741	D7	R3866	C7
D6604	D13	J9049	E4	Q7830	D5	R3603	C12	R3742	D8	R3867	B8
D6605	D13	J9050	D6	Q7852	C8	R3604	D12	R3743	D7	R3871	C13
D6606	C13	J9051	E8	Q7871	C12	R3605	G3	R3744	D6	R3872	C12
D6680	F13	J9052	E8	R2552	D10	R3606	G4	R3745	D7	R3873	C11
D6681	F13	J9053	D8	R3050	C4	R3607	D12	R3750	C6	R3874	C11
D6740	D7	J9054	B11	R3500	G4	R3609	C12	R3751	C5	R3875	C12
D6741	D7	J9055	F9	R3501	E5	R3610	D12	R3752	C6	R3876	B12
D6750	D5	J9056	E7	R3502	G6	R3611	D12	R3753	C5	R3877	B12
D6751	D5	J9057	C4	R3503	F7	R3612	E12	R3754	C4	R3880	B6
D6790	E8	J9058	E4	R3504	F8	R3613	D12	R3755	D5	R3881	C6
D6791	E8	J9059	D6	R3506	F5	R3614	E12	R3756	D6	R3882	B6
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D6831	E5	J9062	B9	R3509	F6	R3617	D13	R3771	B4	R3885	B6
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D6870	C13	J9067	D4	R3514	G4	R3624	D4	R3776	C4		
D6871	C13	J9068	E9	R3515	E5	R3625	D3	R3777	B3		
D6872	C12	J9069	C7	R3516	D13	R3626	D3	R3778	C3		
D6873	C11	J9070	C7	R3517	F6	R3630	G2	R3779	B4		
D6874	C11	J9070	B4	R3518	E6	R3631	F3	R3790	F8		
D6875	C11	J9071	F3	R3519	E6	R3632	F3	R3791	F10		
J9001	F4	J9072	F7	R3520	D11	R3640	B12	R3792	D8		
J9002	D12	J9073	F6	R3521	D11	R3641	C11	R3793	E8		
J9003	E13	J9074	E6	R3522	D10	R3642	E13	R3794	F8		
J9004	B13	J9075	D11	R3523	D10	R3643	E12	R3795	E9		
J9005	B11	J9076	B11	R3524	D11	R3644	F3	R3796	G8		
J9006	E9	J9077	B13	R3525	E10	R3645	G2	R3797	F10		
J9009	C7	J9078	F2	R3527	E10	R3646	G3	R3799	F10		
J9010	C9	J9080	C4	R3528	E11	R3647	F3				
J9011	F9	J9081	E8	R3529	D8	R3648	E2				
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J9015	E11			R3543	F9						
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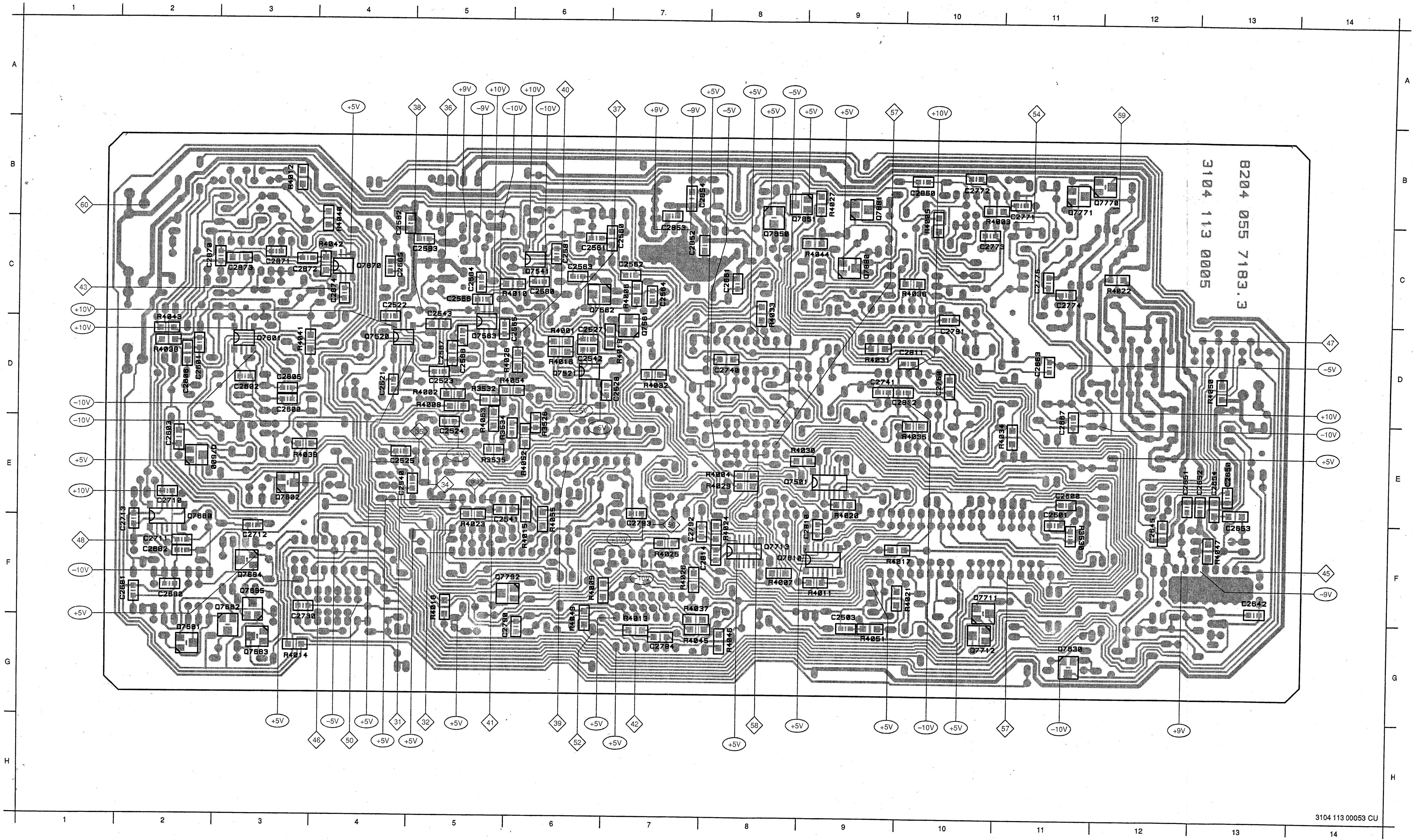
SERVO PANEL SOLDER SIDE



3104 113 00053 CU

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C2501	E11
C2503	G9
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C2523	D5
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C2525	E4
C2527	D6
C2528	D7
C2540	E4
C2541	F5
C2542	D6
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C2560	C7
C2561	C6
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C2564	C7
C2565	D6
C2566	C5
C2567	D5
C2568	D5
C2581	C6
C2582	C4
C2583	C5
C2584	C5
C2600	D3
C2601	D2
C2602	D3
C2603	E2
C2605	D3
C2606	D2
C2642	F13
C2645	F12
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C2652	E13
C2653	F13
C2654	E13
C2661	C8
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C2680	F2
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C2682	F2
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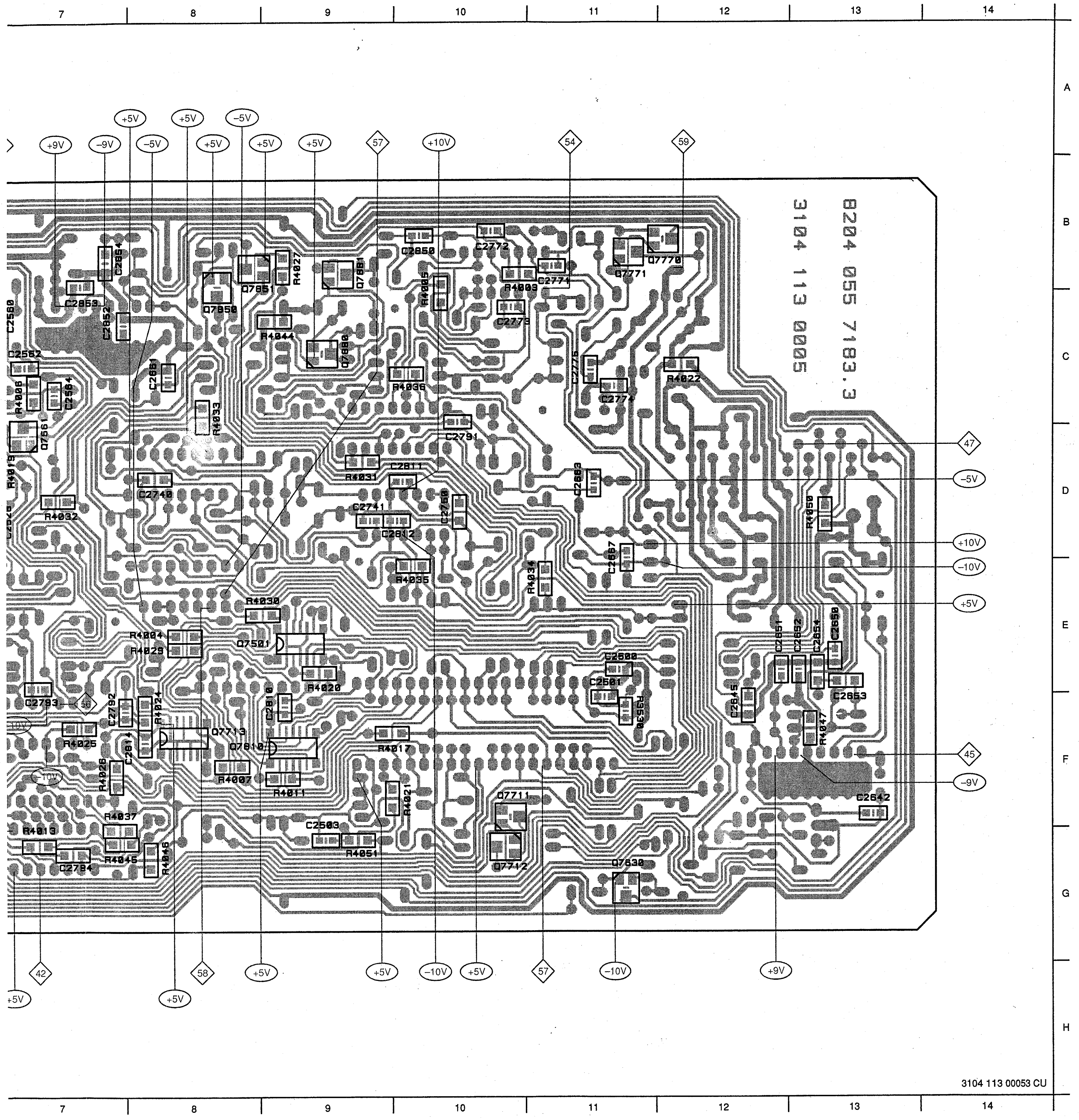
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R4021
Q7711
C2642
R4037
C2503
R4015
R4051
R4045
R4046
C2794
Q7712
Q7630
3104 113 00053 CU

3104 113 00053 CU

C2500	E11	C2850	B10	R4027	B9
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C2503	G9	C2853	C7	R4029	E8
C2521	D4	C2854	B7	R4030	E9
C2522	C4	C2870	C3	R4031	D9
C2523	D5	C2871	C3	R4032	D7
C2524	E5	C2872	C3	R4033	C8
C2525	E4	C2873	C3	R4034	E11
C2527	D6	C2874	C4	R4035	E10
C2528	D7	C7292	F7	R4036	C10
C2540	E4	Q7501	E9	R4037	F7
C2541	F5	Q7520	D4	R4038	D2
C2542	D6	Q7521	D6	R4039	E3
C2543	C5	Q7541	C6	R4040	C4
C2560	C7	Q7561	D7	R4041	D3
C2561	C6	Q7562	C6	R4042	C4
C2562	C7	Q7563	D5	R4043	D2
C2563	C6	Q7600	E2	R4044	C9
C2564	C7	Q7601	G2	R4045	G7
C2565	D6	Q7601	D3	R4046	G8
C2566	C5	Q7602	E3	R4047	F13
C2567	D5	Q7630	G11	R4049	G6
C2568	D5	Q7680	F2	R4050	D13
C2581	C6	Q7682	F3	R4051	G9
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C2584	C5	Q7685	F3	R4054	D6
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C2602	D3	Q7713	F8		
C2603	E2	Q7770	B12		
C2605	D3	Q7771	B11		
C2606	D2	Q7792	F6		
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C2654	E13	R3526	E6		
C2661	C8	R3530	F11		
C2663	D11	R3532	D5		
C2665	C4	R3534	E5		
C2667	E11	R3535	E5		
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C2682	F2	R4003	B10		
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C2771	B11	R4012	B3		
C2772	B10	R4013	G7		
C2773	C10	R4014	G3		
C2774	C11	R4015	F6		
C2775	C11	R4016	D6		
C2790	G6	R4017	F9		
C2791	D10	R4018	F5		
C2793	F7	R4019	D7		
C2794	G7	R4020	E9		
C2810	F9	R4021	F10		
C2811	D10	R4022	C12		
C2812	D10	R4023	F5		
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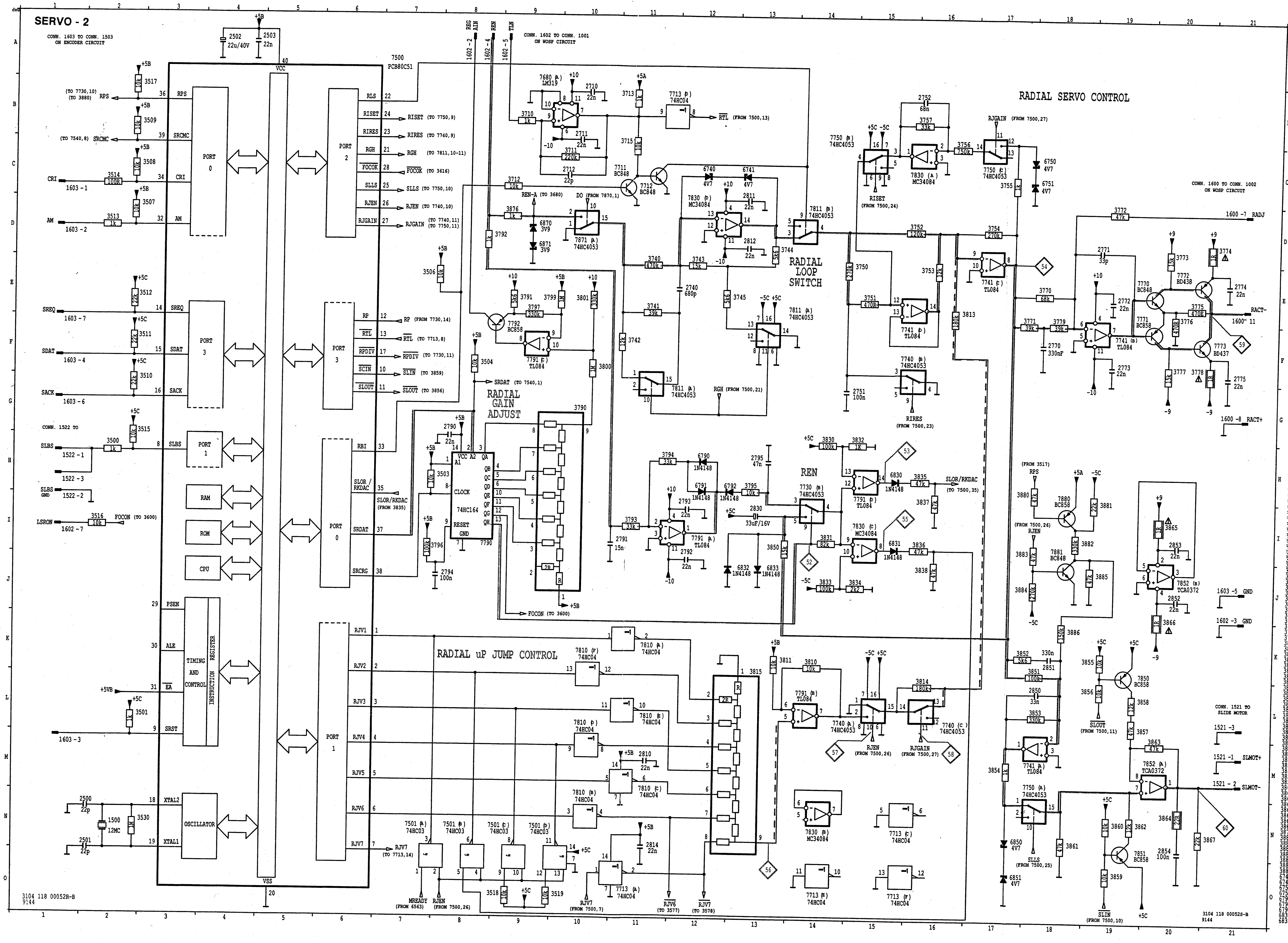
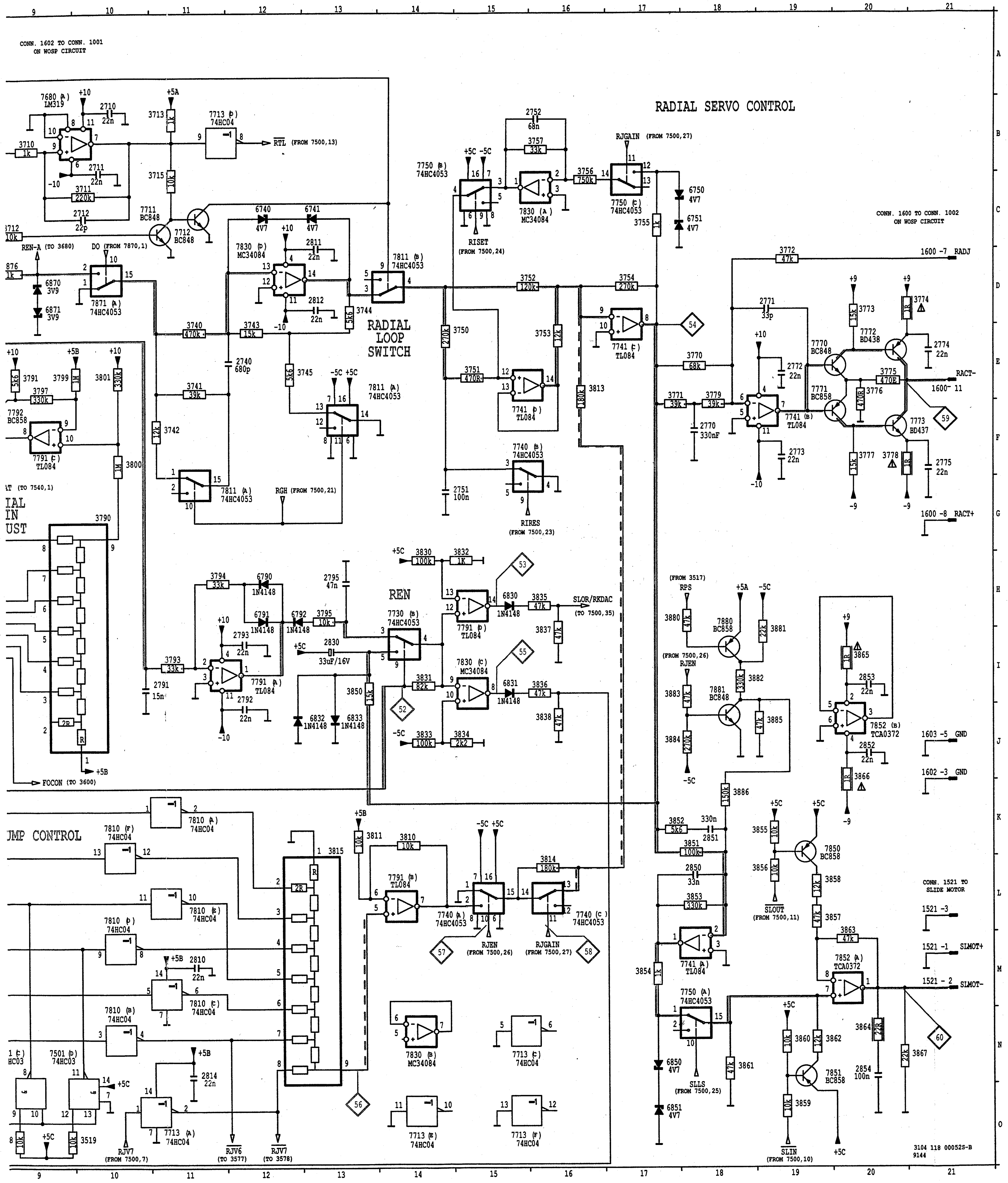
		R4025	F7		
		R4026	F7		

SERVO CIRCUIT DIAGRAM


SERVO - 2
CONN. 1603 TO CONN. 1503 ON ENCODER CIRCUIT
CONN. 1602 TO CONN. 1001 ON WOSP CIRCUIT
CONN. 1600 TO CONN. 1002 ON WOSP CIRCUIT
CONN. 1521 TO SLIDE MOTOR
CONN. 1522 TO
7500 PCB80C51
PORT 0
PORT 1
PORT 2
PORT 3
RAM
ROM
CPU
TIMING AND CONTROL
INSTRUCTION REGISTER
OSCILLATOR
VCC
VSS
RPS
SRCMC
CRI
AM
SREQ
SDAT
SACK
SLBS
PSEN
ALE
EA
SRST
XTAL2
XTAL1
RLS
RISET
RIRES
RGH
FOCOK
SLLS
RJEN
RJGAIN
RP
RTL
RPDIV
SCIN
SLOUT
RBI
SLOR / RKDAC
SRDAT
SRCRG
RJV1
RJV2
RJV3
RJV4
RJV5
RJV6
RJV7
1500 12MC
REG AIN
REN
RTLN
RADIAL SERVO CONTROL
RADIAL LOOP SWITCH
RADIAL GAIN ADJUST
REN
RADIAL uP JUMP CONTROL
7680 LM319
7713 74HC04
7711 BC848
7712 BC848
7830 MC34084
7811 74HC4053
7871 74HC4053
7792 BC858
7791 TL084
7790 74HC164
7750 74HC4053
7741 TL084
7740 74HC4053
7730 74HC4053
7770 BC848
7771 BC858
7772 BD438
7773 BD437
7880 BC858
7881 BC848
7850 BC858
7851 BC858
7852 TCA0372
7810 74HC04
7501 74HC03
FOCON (TO 3600)
SRDAT (TO 7540,1)
RADJ
RACT-
RACT+
GND
SLMOT+
SLMOT-
MREADY (FROM 6563)
RJEN (FROM 7500,26)
RJV7 (FROM 7500,7)
RJV6 (TO 3577)
RJV7 (TO 3578)
SLIN (FROM 7500,10)
3104 118 00052R-B 9144
3104 118 00052S-B 9144

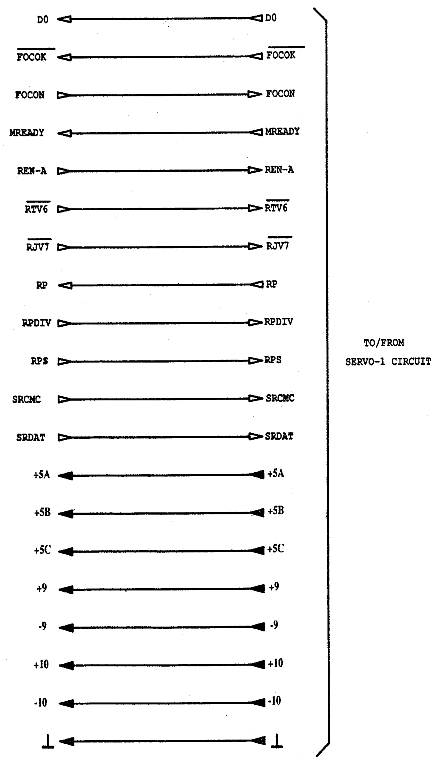
1500	N 2
1521	M21
1521	M21
1521	L21
1522	I 1
1522	H 1
1522	H 1
1600	G21
1600	D21
1600	E21
1602	A 8
1602	A 8
1602	A 9
1602	J21
1602	I 1
1603	J21
1603	M 1
1603	G 1
1603	F 1
1603	F 1
1603	D 1
1603	C 1
2500	N 2
2501	N 2
2502	A 4
2503	A 5
2710	B10
2711	B10
2712	C10
2740	E12
2751	G15
2752	B16
2770	F18
2771	D19
2772	E19
2773	F19
2774	E21
2775	F21
2790	G 8
2791	I11
2792	I12
2793	I12
2794	J 8
2795	H13
2810	M11
2811	C13
2812	D13
2814	N11
2830	I13
2850	L18
2851	K18
2852	J20
2853	I20
2854	N20
3500	H 2
3501	L 3
3503	H 8
3504	F 8
3506	E 7
3507	D 3
3508	C 3
3509	B 3
3510	G 3
3511	F 3
3512	E 3
3513	D 2
3514	C 2
3515	G 3
3516	I 2
3517	B 3
3518	O 9
3519	O10
3530	N 3
3710	B 9
3711	C10
3712	C 9
3713	B11
3715	C11
3740	E11
3741	E11
3742	F11
3743	E12
3744	D13
3745	E13
3750	E15
3751	E15
3752	D16
3753	E16
3754	D17
3755	C17
3756	C16
3757	B16
3770	E18
3771	E17
3772	D19
3773	D20
3774	D21
3775	E20
3776	E20
3777	F20
3778	F20
3779	E18
3790	G10
3791	E 9
3792	D 9
3793	I11
3794	H11
3795	H13
3796	I 8
3797	E 9
3799	E 9
3800	F10
3801	E10
3810	K14
3811	K13
3813	E16
3814	L16
3815	K13
3830	H14
3831	I14
3832	H15
3833	J14
3834	J15
3835	H16
3836	I16
3837	I16
3838	J16
3850	I13
3851	K18
3852	K17
3853	L18
3854	M17
3855	K19
3856	L19
3857	L20
3858	L20
3859	O19
3860	N19
3861	N18
3862	N20
3863	M20
3864	N20
3865	I20
3866	J20
3867	N21
3876	D 9
3880	H17
3881	I19
3882	I19
3883	I17
3884	J17
3885	J19
3886	K18
6740	C12
6741	C13
6750	C18
6751	C18
6790	H12
6791	H12
6792	H12
6830	H15
6831	I15
6832	J
6833	J
6850	N
6851	O
6870	D
6871	D
7500	A
7501	N
7501	N
7501	N
7680	A
7711	C
7712	C
7713	O
7713	B
7713	O
7713	O
7713	N
7730	H
7740	L
7740	F
7740	L
7741	F
7741	E
7741	M
7741	F
7750	B
7750	C
7750	M
7770	E
7771	E
7772	E
7773	F
7790	I
7791	F
7791	I
7791	L
7791	I
7792	F
7810	N
7810	L
7810	K
7810	K
7810	M
7810	L
7811	G
7811	E
7811	D
7830	C
7830	N
7830	I
7830	C
7850	K
7851	N
7852	M
7852	J
7871	D
7880	H
7881	I

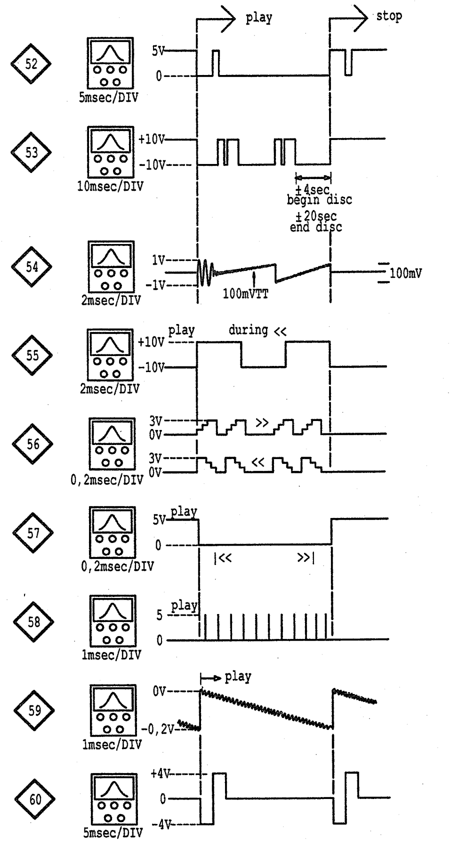

CONN. 1602 TO CONN. 1001 ON WOSP CIRCUIT
RADIAL SERVO CONTROL
RADIAL LOOP SWITCH
REN
UMP CONTROL
CONN. 1600 TO CONN. 1002 ON WOSP CIRCUIT
CONN. 1521 TO SLIDE MOTOR
1600 -7 RADJ
RACT-
1600- 11
1600 -8 RACT+
1603 -5 GND
1602 -3 GND
1521 -3
1521 -1 SLMOT+
1521 - 2 SLMOT-
RTL (FROM 7500,13)
RJGAIN (FROM 7500,27)
RISET (FROM 7500,24)
RIRES (FROM 7500,23)
RGH (FROM 7500,21)
SLOR/RKDAC (TO 7500,35)
RJEN (FROM 7500,26)
RJGAIN (FROM 7500,27)
SLOUT (FROM 7500,11)
SLLS (FROM 7500,25)
SLIN (FROM 7500,10)
RPS (FROM 3517)
RJEN (FROM 7500,26)
FOCON (TO 3600)
RJV7 (FROM 7500,7)
RJV6 (TO 3577)
RJV7 (TO 3578)
3104 118 00052S-B 9144

1500	N 2
1521	M21
1521	M21
1521	L21
1522	I 1
1522	H 1
1522	H 1
1600	G21
1600	D21
1600	E21
1602	A 8
1602	A 8
1602	A 9
1602	J21
1602	I 1
1603	J21
1603	M 1
1603	G 1
1603	F 1
1603	F 1
1603	D 1
1603	C 1
2500	N 2
2501	N 2
2502	A 4
2503	A 5
2710	B10
2711	B10
2712	C10
2740	E12
2751	G15
2752	B16
2770	F18
2771	D19
2772	E19
2773	F19
2774	E21
2775	F21
2790	G 8
2791	I11
2792	I12
2793	I12
2794	J 8
2795	H13
2810	M11
2811	C13
2812	D13
2814	N11
2830	I13
2850	L18
2851	K18
2852	J20
2853	I20
2854	N20
3500	H 2
3501	L 3
3503	H 8
3504	F 8
3506	E 7
3507	D 3
3508	C 3
3509	B 3
3510	G 3
3511	F 3
3512	E 3
3513	D 2
3514	C 2
3515	G 3
3516	I 2
3517	B 3
3518	O 9
3519	O10
3530	N 3
3710	B 9
3711	C10
3712	C 9
3713	B11
3715	C11
3740	E11
3741	E11
3742	F11
3743	E12
3744	D13
3745	E13
3750	E15
3751	E15
3752	D16
3753	E16
3754	D17
3755	C17
3756	C16
3757	B16
3770	E18
3771	E17
3772	D19
3773	D20
3774	D21
3775	E20
3776	E20
3777	F20
3778	F20
3779	E18
3790	G10
3791	E 9
3792	D 9
3793	I11
3794	H11
3795	H13
3796	I 8
3797	E 9
3799	E 9
3800	F10
3801	E10
3810	K14
3811	K13
3813	E16
3814	L16
3815	K13
3830	H14
3831	I14
3832	H15
3833	J14
3834	J15
3835	H16
3836	I16
3837	I16
3838	J16
3850	I13
3851	K18
3852	K17
3853	L18
3854	M17
3855	K19
3856	L19
3857	L20
3858	L20
3859	O19
3860	N19
3861	N18
3862	N20
3863	M20
3864	N20
3865	I20
3866	J20
3867	N21
3876	D 9
3880	H17
3881	I19
3882	I19
3883	I17
3884	J17
3885	J19
3886	K18
6740	C12
6741	C13
6750	C18
6751	C18
6790	H12
6791	H12
6792	H12
6830	H15
6831	I15
6832	J13
6833	J13
6850	N17
6851	O17
6870	D 9
6871	D 9
7500	A 7
7501	N 7
7501	N 8
7501	N 9
7501	N 9
7680	A 9
7711	C10
7712	C11
7713	O11
7713	B11
7713	O14
7713	O15
7713	N15
7730	H14
7740	L14
7740	F15
7740	L16
7741	F15
7741	E17
7741	M18
7741	F19
7750	B14
7750	C17
7750	M17
7770	E19
7771	E19
7772	E20
7773	F21
7790	I 8
7791	F 9
7791	I12
7791	L14
7791	I15
7792	F 9
7810	N10
7810	L10
7810	K10
7810	K11
7810	M11
7810	L11
7811	G11
7811	E13
7811	D14
7830	C12
7830	N14
7830	I15
7830	C16
7850	K19
7851	N19
7852	M20
7852	J20
7871	D10
7880	H18
7881	I18

SERVO-2

AM - Additional Mute
CRI - Counter Reset Inhibit
FOCOK - In Focus Signal
FOCON - Focus On
GND - Ground
LSRON - Laser On
MREADY - Turntable Motor Ready
RACT+ - - Radial Actuator
RADJ - Radial Gain Adjust
RBI - Radial Brake Inhibit
REGAIN - Radial Gain Current
REN - Radial Error Normalized
REN-A - Radial Error Normalized A
RGH - Radial Gain High
RIRES - Radial Integrator Reset
RISET - Radial Integrator Preset
RJEN - Radial Jump Enable
RJGAIN - Radial Jump Gain
RJV1-7 - Radial Jump Voltage
RLS - Radial Loop Switch
RP - Radial Polarity
RPDIV - Radial Polarity Divider
RTL - Radial Track Loss
SACK - Servo Acknowledge
SDAT - Servo Data
SLBS - Slide Begin Switch
SLIN - Slide Inwards Pulse
SLLS - Slide Servo Loopswitch
SLMOT+ - - Slide Motor
SLOR/RKDAC - Slide Outwards Request/ADC Determination Radial Amplitude
SLOUT - Slide Outwards Pulse
SRCRG - Shift Register Clock Radial Gain
SRDAT - Shift Register Data
SREQ - Servo Request
SRST - Servo Reset
TLN - Trackloss Normalized


DO
FOCOK
FOCON
MREADY
REN-A
RTV6
RJV7
RP
RPDIV
RPS
SRCMC
SRDAT
+5A
+5B
+5C
+9
-9
+10
-10
⊥
TO/FROM SERVO-1 CIRCUIT

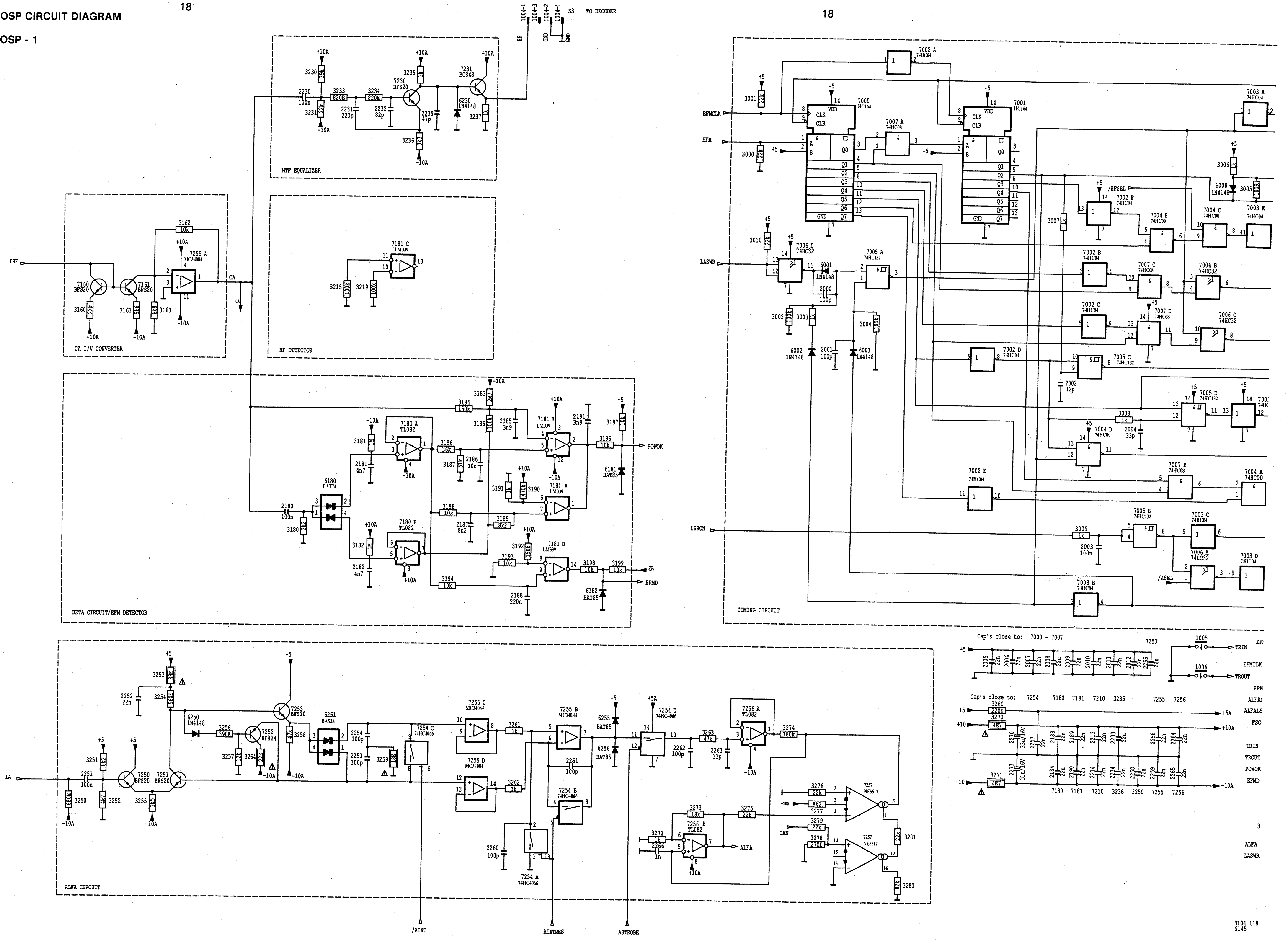


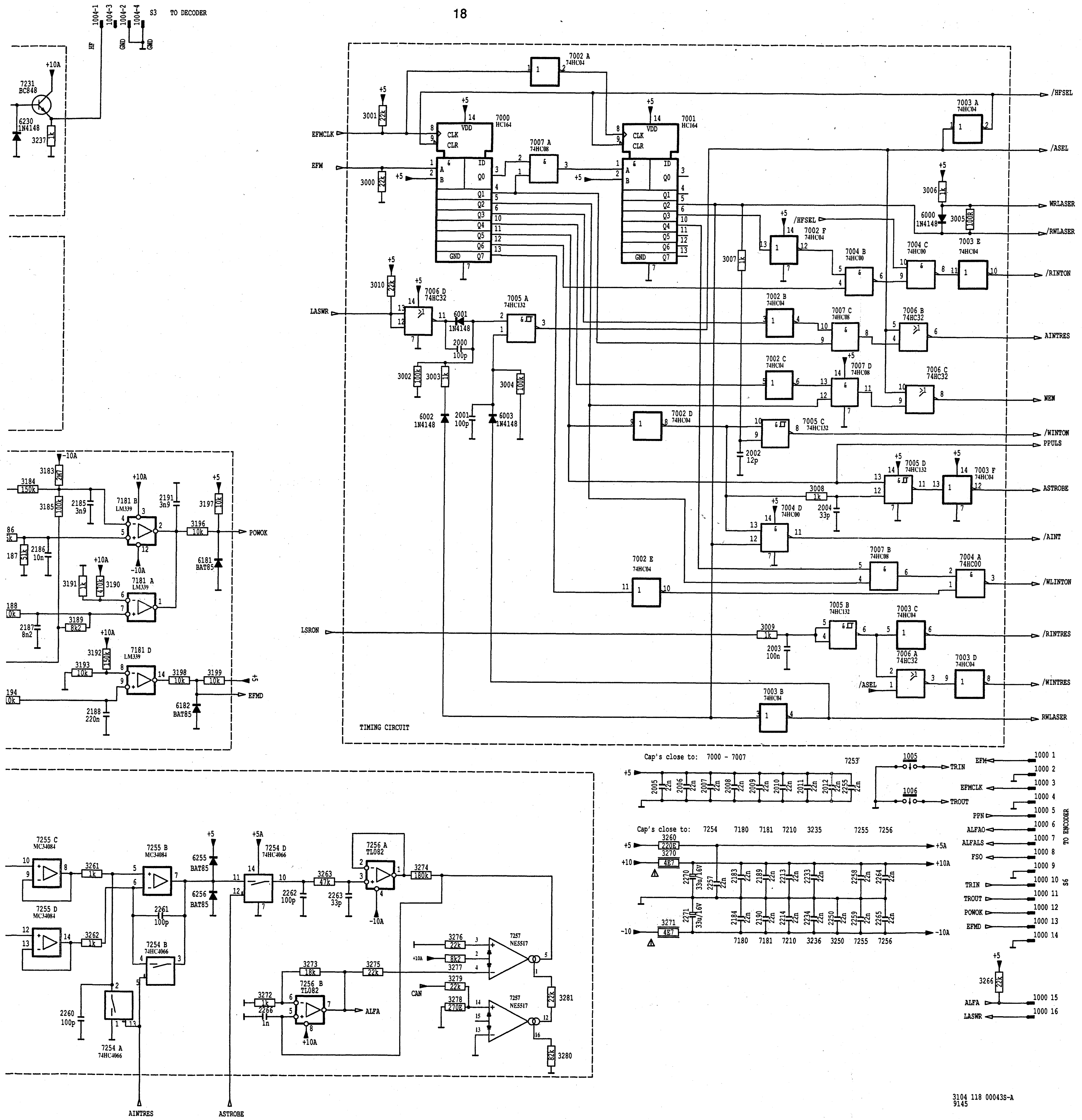
WOSP CIRCUIT DIAGRAM

WOSP - 1

18′

18


1004-1
1004-3
1004-2
1004-4
S3
TO DECODER
HF
GND
MTF EQUALIZER
2230 100n
3230 39k
3231 22k
3233 820E
3234 820E
2231 220p
2232 82p
7230 BFS20
3235 1k
3236 3k3
2235 47p
6230 1N4148
7231 BC848
3237 1k
+10A
-10A
CA I/V CONVERTER
IHF
7160 BFS20
7161 BFS20
3160 22k
3161 5k6
3163 6k8
3162 10k
7255 A MC34084
CA
HF DETECTOR
7181 C LM339
3215 100k
3219 100k
BETA CIRCUIT/EFM DETECTOR
3183 2M7
3184 150k
3185 100k
2185 3n9
2191 3n9
3197 10k
7180 A TL082
7181 B LM339
3181 1M
2181 4n7
3186 36k
3187 51k
2186 10n
3196 10k
POWOK
6181 BAT85
6180 BAT74
2180 100n
3180 2k2
3191 1k
3190 100k
7181 A LM339
3188 10k
2187 8n2
3189 8k2
7180 B TL082
3182 1M
2182 4n7
3192 150k
7181 D LM339
3193 10k
3198 10k
3199 10k
+5
EFMD
3194 10k
2188 220n
6182 BAT85
ALFA CIRCUIT
IA
2251 100n
3250 680E
3251 8k2
3252 3k3
7250 BFS20
7251 BFS20
3255 1k5
2252 22n
3253 33E
3254 560E
6250 1N4148
3256 390E
7252 BF824
3257 12k
3264 22E
7253 BFS20
3258 47k
6251 BAS28
2254 100p
2253 100p
3259 18E
7254 C 74HC4066
7255 C MC34084
7255 D MC34084
3261 1k
3262 1k
7255 B MC34084
2261 100p
7254 B 74HC4066
2260 100p
7254 A 74HC4066
6255 BAT85
6256 BAT85
+5A
7254 D 74HC4066
2262 100p
3263 47k
2263 33p
7256 A TL082
3274 180k
3276 22k
3277 8k2
3279 22k
3278 270E
7257 NE5517
3273 18k
3275 22k
3272 1k
2266 1n
7256 B TL082
ALFA
CAN
3281 22k
3280 82k
/AINT
AINTRES
ASTROBE
TIMING CIRCUIT
EFMCLK
EFM
LASWR
LSRON
3001 22k
3000 22k
7000 HC164
7001 HC164
7002 A 74HC04
7007 A 74HC08
7003 A 74HC04
3006 1k
6000 1N4148
3005 100k
/HFSEL
7002 F 74HC04
7004 B 74HC00
7004 C 74HC00
7003 E 74HC04
3007 1k
3010 22k
7006 D 74HC32
6001 1N4148
2000 100p
7005 A 74HC132
7002 B 74HC04
7007 C 74HC08
7006 B 74HC32
3002 100k
3003 1k
3004 100k
7002 C 74HC04
7007 D 74HC08
7006 C 74HC32
6002 1N4148
2001 100p
6003 1N4148
7002 D 74HC04
7005 C 74HC132
2002 12p
7005 D 74HC132
3008 1k
2004 33p
7004 D 74HC00
7002 E 74HC04
7007 B 74HC08
7004 A 74HC00
7005 B 74HC132
7003 C 74HC04
3009 1k
2003 100n
7006 A 74HC32
7003 D 74HC04
/ASEL
7003 B 74HC04
Cap's close to: 7000 - 7007
2005 2006 2007 2008 2009 2010 2011 2012 2255
1005
TRIN
1006
TROUT
EFMCLK
Cap's close to: 7254 7180 7181 7210 3235 7255 7256
3260 220E
3270 4E7
3271 4E7
2270 33u 16V
2271 33u 16V
2257 2183 2189 2213 2233 2258 2264
2184 2190 2214 2234 2250 2259 2265
7180 7181 7210 3236 3250 7255 7256
+5A
+10A
-10A
PPN
ALFAC
ALFALS
FSO
TRIN
TROUT
POWOK
EFMD
ALFA
LASWR


1004-1
1004-3
1004-2
1004-4
S3
TO DECODER
HF
GND
+10A
7231
BC848
6230
1N4148
3237
1k
EFMCLK
EFM
LASWR
LSRON
7000
HC164
7001
HC164
7002 A
74HC04
7007 A
74HC08
3001
22k
3000
22k
3010
22k
7006 D
74HC32
7005 A
74HC132
6001
1N4148
2000
100p
3002
100k
3003
1k
3004
100k
6002
1N4148
2001
100p
6003
1N4148
/HFSEL
/ASEL
WRLASER
/RWLASER
/RINTON
AINTRES
NEN
/WINTON
PPULS
ASTROBE
/AINT
/WLINTON
/RINTRES
/WINTRES
RWLASER
7003 A
74HC04
3006
1k
6000
1N4148
3005
100k
7002 F
74HC04
7004 B
74HC00
7004 C
74HC00
7003 E
74HC04
3007
1k
7002 B
74HC04
7007 C
74HC08
7006 B
74HC32
7002 C
74HC04
7007 D
74HC08
7006 C
74HC32
7002 D
74HC04
7005 C
74HC132
2002
12p
7005 D
74HC132
7003 F
74HC04
3008
1k
2004
33p
7004 D
74HC00
7007 B
74HC08
7004 A
74HC00
7002 E
74HC04
7005 B
74HC132
7003 C
74HC04
3009
1k
2003
100n
7006 A
74HC32
7003 D
74HC04
/ASEL
7003 B
74HC04
TIMING CIRCUIT
-10A
3183
2M2
3184
150k
3185
100k
2185
3n9
7181 B
LM339
2191
3n9
3197
10k
3196
10k
POWOK
6181
BAT85
2186
10n
3191
1k
3190
470k
7181 A
LM339
3189
8k2
2187
8n2
3192
150k
7181 D
LM339
3193
10k
3198
10k
3199
10k
EFMD
6182
BAT85
2188
220n
Cap's close to: 7000 - 7007
7253
2005
2006
2007
2008
2009
2010
2011
2012
2255
22n
1005
TRIN
1006
TROUT
EFM
EFMCLK
PPN
ALFA0
ALFALS
FSO
TRIN
TROUT
POWOK
EFMD
1000 1
1000 2
1000 3
1000 4
1000 5
1000 6
1000 7
1000 8
1000 9
1000 10
1000 11
1000 12
1000 13
1000 14
TO ENCODER
S6
Cap's close to: 7254 7180 7181 7210 3235 7255 7256
3260
220R
+5A
3270
4E7
+10A
2270
33u/16V
2257
2183
2189
2213
2233
2258
2264
2271
33u/16V
2184
2190
2214
2234
2250
2259
2265
3271
4E7
-10A
7180 7181 7210 3236 3250 7255 7256
+5
3266
22k
ALFA
LASWR
1000 15
1000 16
7255 C
MC34084
7255 D
MC34084
3261
1k
3262
1k
7255 B
MC34084
2261
100p
7254 B
74HC4066
2260
100p
7254 A
74HC4066
6255
BAT85
6256
BAT85
7254 D
74HC4066
+5A
2262
100p
3263
47k
2263
33p
7256 A
TL082
3274
180k
3273
18k
3275
22k
3272
1k
2266
1n
7256 B
TL082
ALFA
3276
22k
8k2
3277
3279
22k
3278
270R
CAN
7257
NE5517
3281
22k
3280
82k
AINTRES
ASTROBE

3104 118 00043S-A
9145

WOSP-1

AINT - Absorption Integrator
AINTRES - Absorption Integrator Reset
ALFA - Actual Absorption
ALFA0 - Absorption Set
ALFALS - Absorption Loop Switch
ASEL - CA Current Select
ASTROBE - Absorption Strobe
CA - Central apperture signal
EFM - Eight to Fourteen Modulation
EFMCLK - EFM Clock
EFMD - Eight to Fourteen Modulation Detect
FSO - Forward Sense Diode Reference Current
GND - Ground
HF - High Frequency
HFSEL - Select CA Current For HF Reading Purposes
IA - 3 Spot Push Pull Diode Current
LASWR - Laser Write/Non Read
LSRON - Laser On
NEN - Normalizer Enable
POWOK - Writing Power Ok
PPN - Normalized Push Pull Signal
RINTON - Read Integrator On
RINTRES - Read Integrator Reset
RWLASER - Read/Nonwrite laserpower
TRIN - Tray In Switch
TROUT - Tray Out Switch
WINTON - Write Integrator On
WLINTON - Write Integrator On
WRLASER - Write Mode/Non Read Mode Laser

WOSP PANEL COMPONENT SIDE

1000	E11
1001	A2
1002	A10
1003	B6
1004	B1
1005	F3
1006	F4
1007	A4
2000	F6
2001	E7
2002	F7
2003	F5
2004	E8
2005	E9
2006	F9
2007	F8
2008	E6
2009	E8
2010	E7
2011	F7
2012	E9
2020	D6
2021	B9
2022	B8
2023	D9
2024	D8
2025	B7
2026	C7
2027	D8
2028	D7
2029	D7
2030	C10
2031	B10
2032	B7
2033	C10
2034	C10
2035	D10
2100	E5
2101	B5
2102	B7
2103	C6
2104	C6
2105	B7
2106	B5
2107	B6
2108	D4
2109	C7
2110	D7
2111	C6
2112	C7
2113	B3
2114	B3
2115	B4
2116	B3
2117	B3
2118	B4
2119	B3
2120	B5
2121	B5
2122	C6
2180	E2
2181	F2
2182	E2
2183	F2
2184	F3
2185	F2
2186	F2
2187	E1
2188	D1
2189	E2
2190	E1
2191	F2
2213	C2
2214	C1
2230	B3
2231	B2
2232	B2
2233	A3
2234	B2
2250	C5
2251	C4
2252	C4
2253	C4
2254	C4
2255	C4
2257	D4
2258	C3
2259	C3
2260	C3
2261	C3
2262	D2
2263	D2
2264	D3
2265	E2
2266	D3
2270	A9
2271	A9
2272	B9
2273	B9
2274	B9
2275	B9
3000	D10
3001	E10
3002	F5
3003	E5
3004	F6
3005	F9
3006	F9
3007	F8
3008	E8
3009	F5
3010	E10
3019	D10
3020	D5
3021	E10
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3023	E6
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3025	D6
3026	E6
3028	D6
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3035	D8
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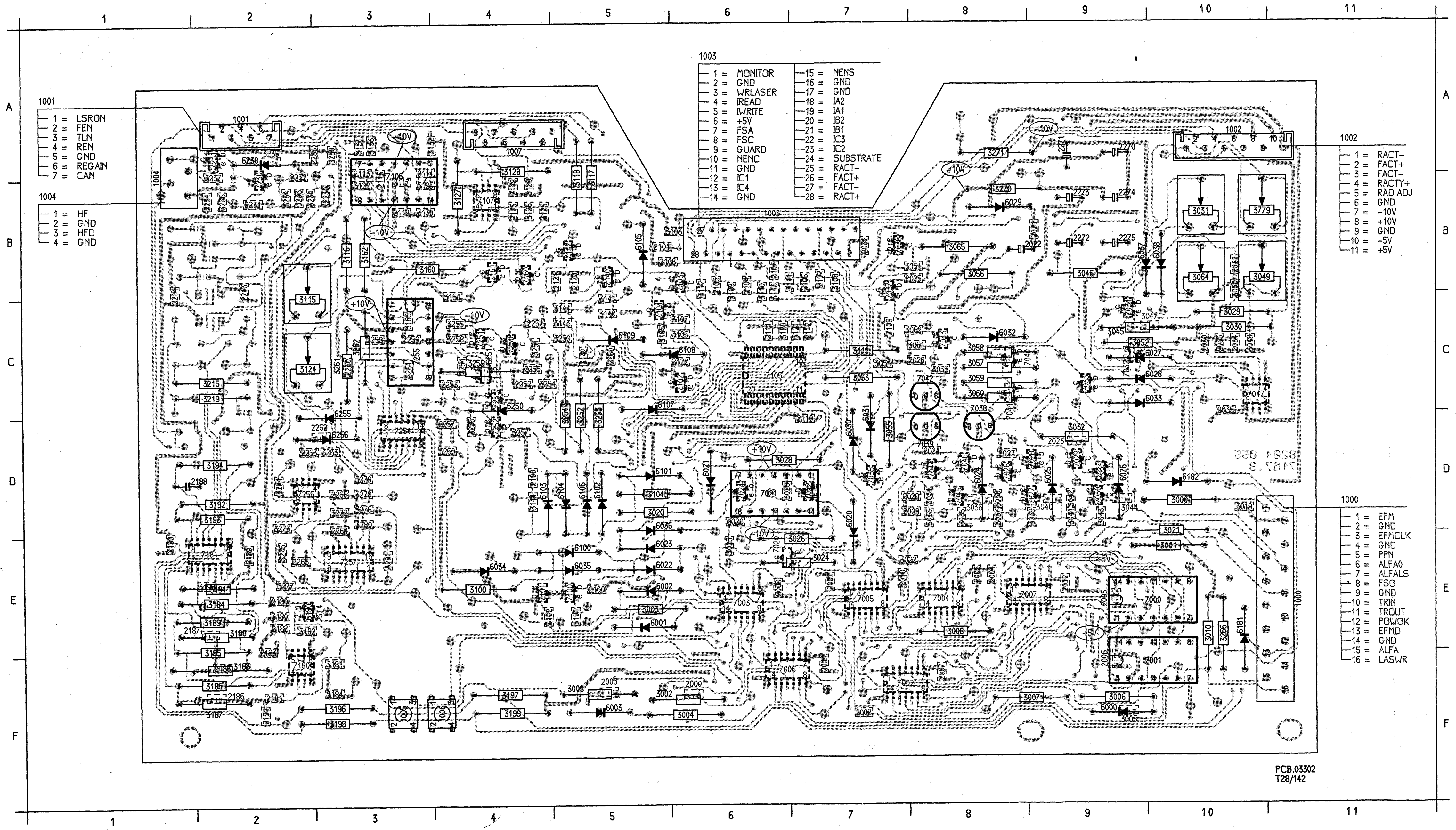
3040	D9
3041	D9
3042	D9
3043	D9
3044	D9
3045	C9
3046	B9
3047	C9
3048	C10
3049	B10
3050	C10
3051	C7
3052	C9
3053	C7
3054	B7
3055	D7
3056	B8
3057	C8
3058	C8
3059	C8
3060	C8
3061	C7
3062	C7
3063	C8
3064	B10
3065	B8
3100	E4
3101	E5
3102	E4
3103	B5
3104	D5
3105	C5
3106	C6
3107	C6
3108	B7
3109	C6
3110	C6
3111	B7
3112	C6
3113	C6
3114	D4
3115	C2
3116	B3
3117	B5
3118	B5
3119	C7
3120	C6
3121	C7
3122	B3
3123	B3
3124	C2
3125	B4
3126	B4
3127	B4
3128	A4
3129	B4
3130	B3
3131	A3
3132	A4
3133	A3
3140	C5
3141	C5
3142	C5
3143	C5
3144	C5
3160	B3
3161	C4
3162	B3
3163	C3
3180	E2
3181	F3
3182	E2
3183	F2
3184	E2
3185	E2
3186	F2
3187	F2
3188	E2
3189	E2
3190	E2
3191	E2
3192	D2
3193	D2
3194	D2
3196	F3
3197	F4
3198	F3
3199	F4
3215	C2
3219	C2
3230	A3
3231	B3
3233	B2
3234	B2
3235	A2
3236	B2
3237	B2
3250	C5
3251	C4
3252	D5
3253	D5
3254	C4
3255	C4
3256	D4
3257	D4
3258	C4
3259	C4
3260	D4
3261	C3
3262	C3
3263	D3
3264	D5
3266	E10
3270	B8
3271	A8
3272	D3
3273	D2
3274	D2
3275	E2
3276	D3
3277	E2
3278	D3
3279	D3
3280	D3
3281	E3
3779	B10
6000	F9
6001	E5
6002	E5
6003	F5
6020	D7
6021	D6
6022	E5
6023	E5
6024	D8
6025	D9
6026	D9
6027	C9
6028	C9
6029	B8
6030	D7
6031	D7
6032	C8
6033	C9
6034	E4
6035	E5
6036	D5
6037	B9
6038	B10
6100	E5
6101	D5
6102	D5
6103	D4
6104	D5
6105	B5
6106	D5
6107	C5
6108	C6
6109	C5
6180	E2
6181	E10
6182	D10
6230	A2
6250	C4
6251	C4
6255	C3
6256	D3
7000	E9
7001	F9
7002	F7
7003	E6
7004	E8
7005	E7
7006	F6
7007	E8
7020	E6
7021	D6
7022	D7
7024	D6
7026	D8
7027	D9
7028	D9
7029	D9
7030	D9
7031	D9
7032	C9
7033	C9
7034	C9
7035	D7
7036	B7
7037	C7
7038	C8
7039	D8
7040	C9
7041	D8
7042	C8
7043	C8
7044	D8
7045	D8
7046	D8
7047	C10
7100	E5
7101	E4
7102	C6
7103	B6
7104	C5
7105	C6
7106	B3
7107	B4
7140	B5
7142	B5
7160	B4
7161	B4
7180	F2
7181	E2
7230	B2
7231	A2
7250	C4
7251	C4
7252	D4
7253	C4
7254	D3
7255	C3
7256	D2
7257	E3


1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
1001
1 = LSRON
2 = FEN
3 = TLN
4 = REN
5 = GND
6 = REGAIN
7 = CAN
1004
1 = HF
2 = GND
3 = HFD
4 = GND
1003
1 = MONITOR
2 = GND
3 = WRLASER
4 = IREAD
5 = IWRITE
6 = +5V
7 = FSA
8 = FSC
9 = GUARD
10 = NENC
11 = GND
12 = IC1
13 = IC4
14 = GND
15 = NENS
16 = GND
17 = GND
18 = IA2
19 = IA1
20 = IB2
21 = IB1
22 = IC3
23 = IC2
24 = SUBSTRATE
25 = RACT-
26 = FACT+
27 = FACT-
28 = RACT+
1002
1 = RACT-
2 = FACT+
3 = FACT-
4 = RACTY+
5 = RAD ADJ
6 = GND
7 = -10V
8 = +10V
9 = GND
10 = -5V
11 = +5V
1000
1 = EFM
2 = GND
3 = EFMCLK
4 = GND
5 = PPN
6 = ALFA0
7 = ALFALS
8 = FSO
9 = GND
10 = TRIN
11 = TROUT
12 = POWOK
13 = EFMD
14 = GND
15 = ALFA
16 = LASWR
+10V
-10V
+5V
PCB.03302
T28/142

WOSP PANEL SOLDER SIDE

1000	E11
1001	A2
1002	A10
1003	B6
1004	B1
1005	F3
1006	F4
1007	A4
2000	F6
2001	E7
2002	F7
2003	F5
2004	E8
2005	E9
2006	F9
2007	F8
2008	E6
2009	E8
2010	E7
2011	F7
2012	E9
2020	D6
2021	B9
2022	B8
2023	D9
2024	D8
2025	B7
2026	C7
2027	D8
2028	D7
2029	D7
2030	C10
2031	B10
2032	B7
2033	C10
2034	C10
2035	D10
2100	E5
2101	B5
2102	B7
2103	C6
2104	C6
2105	B7
2106	B5
2107	B6
2108	D4
2109	C7
2110	D7
2111	C6
2112	C7
2113	B3
2114	B3
2115	B4
2116	B3
2117	B3
2118	B4
2119	B3
2120	B5
2121	B5
2122	C6
2180	E2
2181	F2
2182	E2
2183	F2
2184	F3
2185	F2
2186	F2
2187	E1
2188	D1
2189	E2
2190	E1
2191	F2
2213	C2
2214	C1
2230	B3
2231	B2
2232	B2
2233	A3
2234	B2
2250	C5
2251	C4
2252	C4
2253	C4
2254	C4
2255	C4
2257	D4
2258	C3
2259	C3
2260	C3
2261	C3
2262	D2
2263	D2
2264	D3
2265	E2
2266	D3
2270	A9
2271	A9
2272	B9
2273	B9
2274	B9
2275	B9
3000	D10
3001	E10
3002	F5
3003	E5
3004	F6
3005	F9
3006	F9
3007	F8
3008	E8
3009	F5
3010	E10
3019	D10
3020	D5
3021	E10
3022	E7
3023	E6
3024	E7
3025	D6
3026	E6
3028	D6
3029	C10
3030	C10
3031	B10
3032	D9
3033	D8
3034	D8
3035	D8
3036	D8
3037	D8
3038	D8
3039	D9
3040	D9
3041	D9
3042	D9
3043	D9
3044	D9
3045	C9
3046	B9
3047	C9
3048	C10
3049	B10
3050	C10
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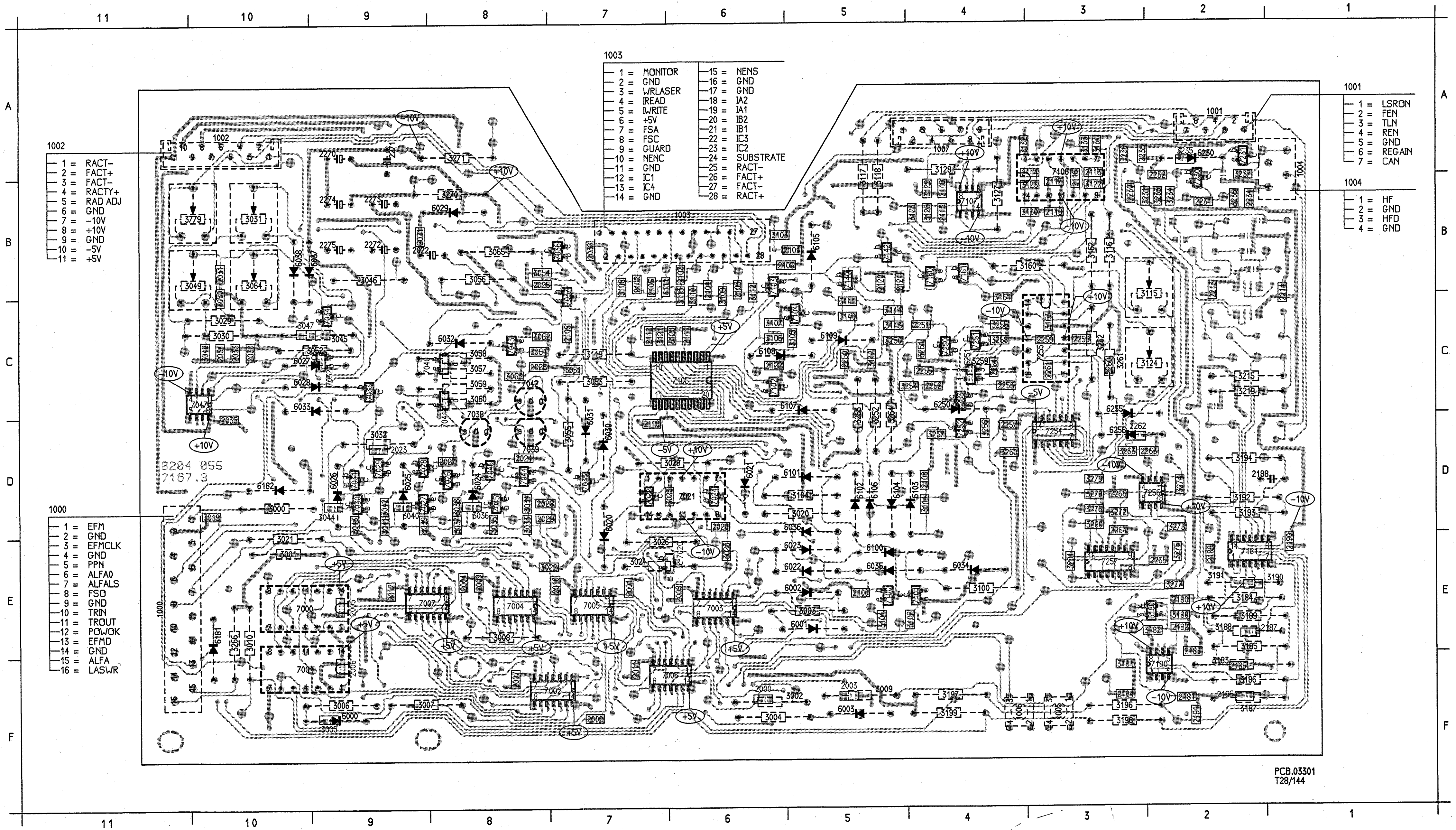
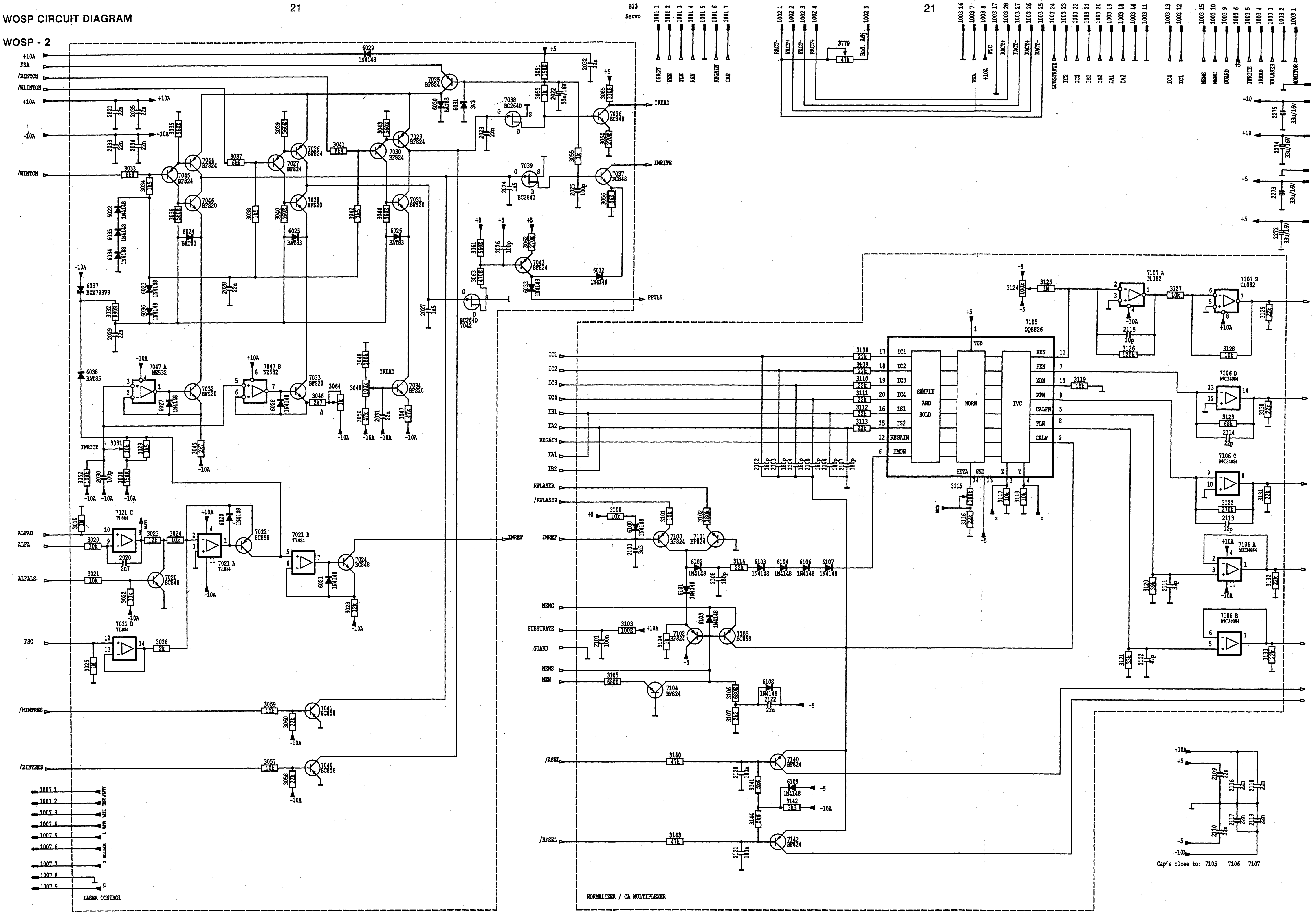
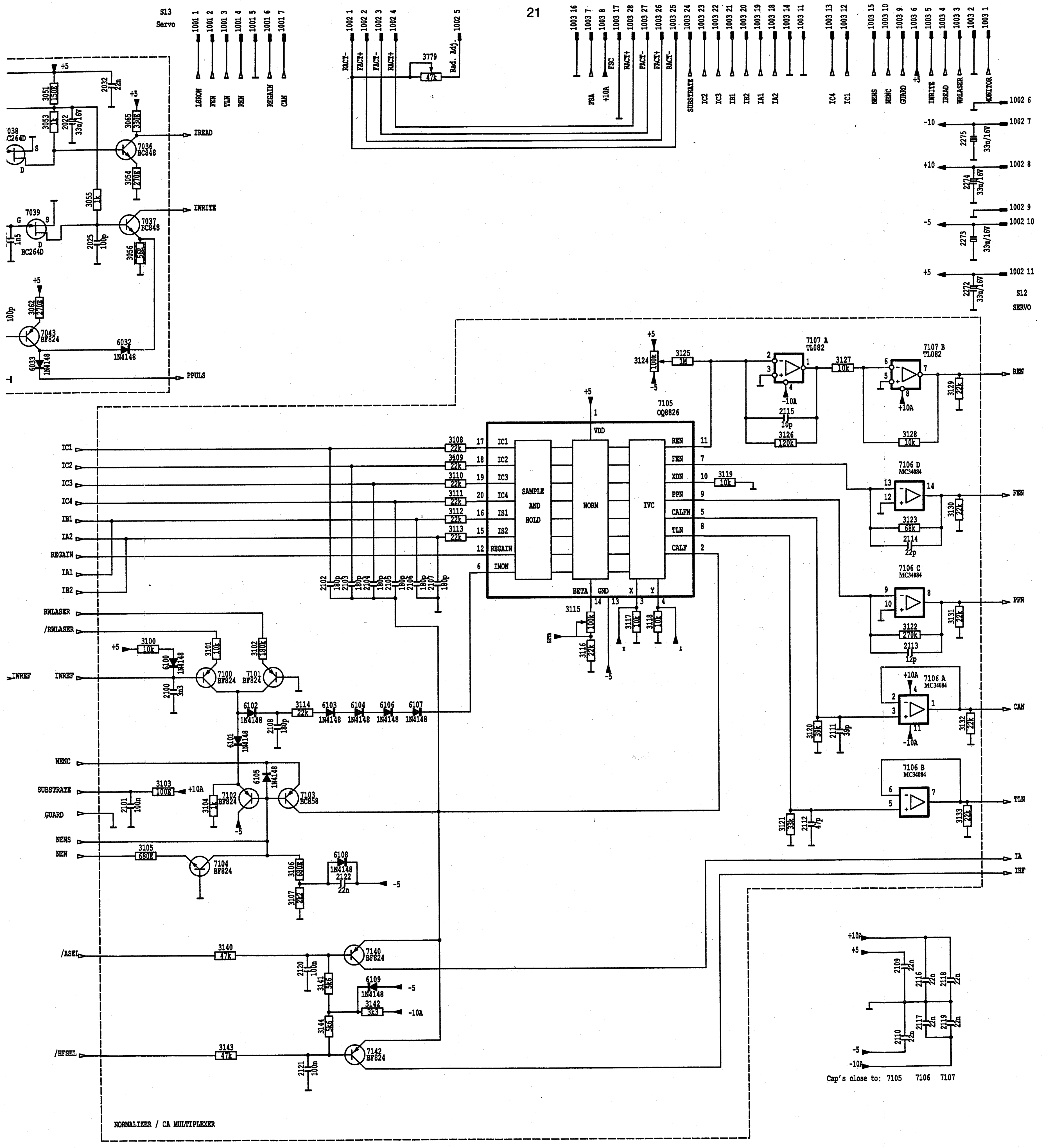
3052	C9
3053	C7
3054	B7
3055	D7
3056	B8
3057	C8
3058	C8
3059	C8
3060	C8
3061	C7
3062	C7
3063	C8
3064	B10
3065	B8
3100	E4
3101	E5
3102	E4
3103	B5
3104	D5
3105	C5
3106	C6
3107	C6
3108	B7
3109	C6
3110	C6
3111	B7
3112	C6
3113	C6
3114	D4
3115	C2
3116	B3
3117	B5
3118	B5
3119	C7
3120	C6
3121	C7
3122	B3
3123	B3
3124	C2
3125	B4
3126	B4
3127	B4
3128	A4
3129	B4
3130	B3
3131	A3
3132	A4
3133	A3
3140	C5
3141	C5
3142	C5
3143	C5
3144	C5
3160	B3
3161	C4
3162	B3
3163	C3
3180	E2
3181	F3
3182	E2
3183	F2
3184	E2
3185	E2
3186	F2
3187	F2
3188	E2
3189	E2
3190	E2
3191	E2
3192	D2
3193	D2
3194	D2
3196	F3
3197	F4
3198	F3
3199	F4
3215	C2
3219	C2
3230	A3
3231	B3
3233	B2
3234	B2
3235	A2
3236	B2
3237	B2
3250	C5
3251	C4
3252	D5
3253	D5
3254	C4
3255	C4
3256	D4
3257	D4
3258	C4
3259	C4
3260	D4
3261	C3
3262	C3
3263	D3
3264	D5
3266	E10
3270	B8
3271	A8
3272	D3
3273	D2
3274	D2
3275	E2
3276	D3
3277	E2
3278	D3
3279	D3
3280	D3
3281	E3
3779	B10
6000	F9
6001	E5
6002	E5
6003	F5
6020	D7
6021	D6
6022	E5
6023	E5
6024	D8
6025	D9
6026	D9
6027	C9
6028	C9
6029	B8
6030	D7
6031	D7
6032	C8
6033	C9
6034	E4
6035	E5
6036	D5
6037	B9
6038	B10
6100	E5
6101	D5
6102	D5
6103	D4
6104	D5
6105	B5
6106	D5
6107	C5
6108	C6
6109	C5
6180	E2
6181	E10
6182	D10
6230	A2
6250	C4
6251	C4
6255	C3
6256	D3
7000	E9
7001	F9
7002	F7
7003	E6
7004	E8
7005	E7
7006	F6
7007	E8
7020	E6
7021	D6
7022	D7
7024	D6
7026	D8
7027	D9
7028	D9
7029	D9
7030	D9
7031	D9
7032	C9
7033	C9
7034	C9
7035	D7
7036	B7
7037	C7
7038	C8
7039	D8
7040	C9
7041	D8
7042	C8
7043	C8
7044	D8
7045	D8
7046	D8
7047	C10
7100	E5
7101	E4
7102	C6
7103	B6
7104	C5
7105	C6
7106	B3
7107	B4
7140	B5
7142	B5
7160	B4
7161	B4
7180	F2
7181	E2
7230	B2
7231	A2
7250	C4
7251	C4
7252	D4
7253	C4
7254	D3
7255	C3
7256	D2
7257	E3


11
10
9
8
7
6
5
4
3
2
1
A
B
C
D
E
F
1003
1 = MONITOR
2 = GND
3 = WRLASER
4 = IREAD
5 = IWRITE
6 = +5V
7 = FSA
8 = FSC
9 = GUARD
10 = NENC
11 = GND
12 = IC1
13 = IC4
14 = GND
15 = NENS
16 = GND
17 = GND
18 = IA2
19 = IA1
20 = IB2
21 = IB1
22 = IC3
23 = IC2
24 = SUBSTRATE
25 = RACT-
26 = FACT+
27 = FACT-
28 = RACT+
1002
1 = RACT-
2 = FACT+
3 = FACT-
4 = RACTY+
5 = RAD ADJ
6 = GND
7 = -10V
8 = +10V
9 = GND
10 = -5V
11 = +5V
1001
1 = LSRON
2 = FEN
3 = TLN
4 = REN
5 = GND
6 = REGAIN
7 = CAN
1004
1 = HF
2 = GND
3 = HFD
4 = GND
1000
1 = EFM
2 = GND
3 = EFMCLK
4 = GND
5 = PPN
6 = ALFA0
7 = ALFALS
8 = FSO
9 = GND
10 = TRIN
11 = TROUT
12 = POWOK
13 = EFMD
14 = GND
15 = ALFA
16 = LASWR
8204 055
7167.3
+10V
-10V
+5V
-5V
PCB.03301
T28/144

WOSP CIRCUIT DIAGRAM

WOSP - 2


S13 Servo
+10A
FSA
/RINTON
/WLINTON
-10A
/WINTON
ALFAO
ALFA
ALFALS
FSO
/WINTRES
/RINTRES
IREAD
IWRITE
PPULS
IWREF
LASER CONTROL
NORMALIZER / CA MULTIPLEXER
IC1
IC2
IC3
IC4
IB1
IA2
REGAIN
IA1
IB2
RWLASER
/RWLASER
NENC
SUBSTRATE
GUARD
NENS
NEN
/ASEL
/HFSEL
7105 OQ8826
SAMPLE AND HOLD
NORM
IVC
VDD
BETA
GND
REN
FEN
XDN
PFN
CALFN
TLN
CALF
IMON
7107 A TL082
7107 B TL082
7106 A MC34084
7106 B MC34084
7106 C MC34084
7106 D MC34084
7047 A NE532
7047 B NE532
7021 A TL084
7021 B TL084
7021 C TL084
7021 D TL084
3779 47k Rad. Adj.
LSRON
FEN
TLN
REN
REGAIN
CAN
RACT-
FACT+
FACT-
RACT+
FSA
+10A
FSC
SUBSTRATE
IC2
IC3
IB1
IB2
IA1
IA2
IC4
IC1
NENS
NENC
GUARD
IWRITE
IREAD
WRLASER
MONITOR
Cap's close to: 7105 7106 7107


S13
Servo
1001 1
1001 2
1001 3
1001 4
1001 5
1001 6
1001 7
LSRON
FEN
TLN
REN
REGAIN
CAN
1002 1
1002 2
1002 3
1002 4
1002 5
RACT-
FACT+
FACT-
RACT+
3779
47k
Rad. Adj.
FSA
+10A
FSC
RACT+
FACT-
FACT+
RACT-
SUBSTRATE
IC2
IC3
IB1
IB2
IA1
IA2
IC4
IC1
NENS
NENC
GUARD
IWRITE
IREAD
WRLASER
MONITOR
1002 6
1002 7
1002 8
1002 9
1002 10
1002 11
2275
2274
2273
2272
33u/16V
S12
SERVO
IREAD
IWRITE
PPULS
7036
BC848
7037
BC848
7039
BC264D
7043
BF824
6032
1N4148
6033
7105
OQ8826
VDD
SAMPLE AND HOLD
NORM
IVC
IC1
IC2
IC3
IC4
IS1
IS2
REGAIN
IMON
REN
FEN
XDN
PPN
CALFN
TLN
CALF
BETA
GND
X
Y
3108 22k
3109 22k
3110 22k
3111 22k
3112 22k
3113 22k
3119 10k
3115 100k
3116 22k
3117 10k
3118 10k
7107 A
TL082
7107 B
TL082
3125 1M
3124 100k
3127 10k
3126 120k
2115 10p
3128 10k
3129 22k
REN
7106 D
MC34084
3123 68k
2114 22p
3130 22k
FEN
7106 C
MC34084
3122 270k
2113 12p
3131 22k
PPN
7106 A
MC34084
3120 33k
2111 39p
3132 22k
CAN
7106 B
MC34084
3121 33k
2112 47p
3133 22k
TLN
IA
IHF
RWLASER
/RWLASER
IWREF
3100 10k
6100 1N4148
2100 3n3
3101 10k
3102 180k
7100 BF824
7101 BF824
6102 1N4148
3114 22k
2108 180p
6103 1N4148
6104 1N4148
6106 1N4148
6107 1N4148
6101 1N4148
NENC
SUBSTRATE
GUARD
NENS
NEN
3103 100E
2101 100n
3104 1k
7102 BF824
6105 1N4148
7103 BC858
3105 680E
7104 BF824
3106 680E
3107 2k2
6108 1N4148
2122 22n
/ASEL
3140 47k
2120 100n
7140 BF824
3141 5k6
6109 1N4148
3142 3k3
3144 5k6
/HFSEL
3143 47k
2121 100n
7142 BF824
2109 22n
2116 22n
2118 22n
2110 22n
2117 22n
2119 22n
Cap's close to: 7105 7106 7107
NORMALIZER / CA MULTIPLEXER

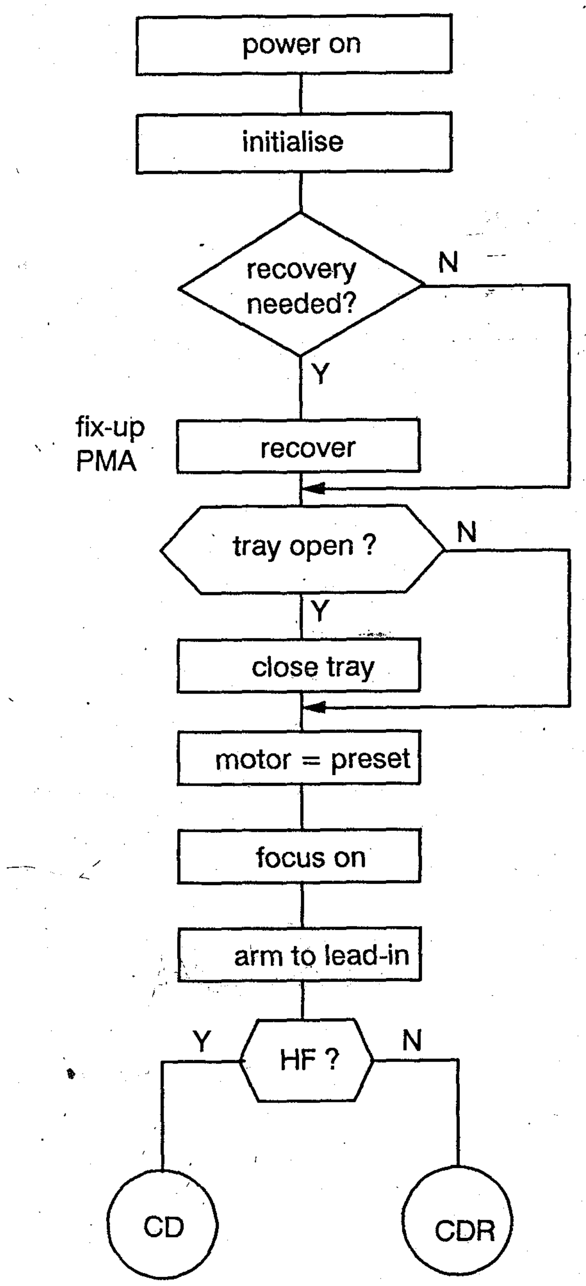
21

WOSP-2

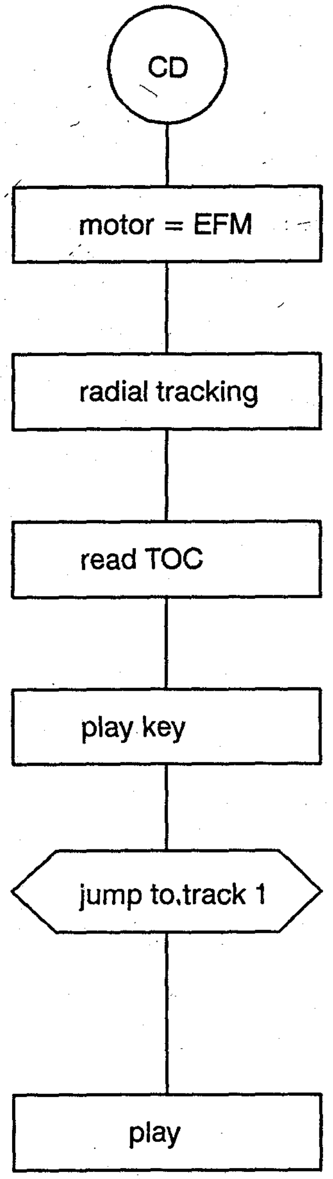
ALFA	- Actual Absorption
ALFA0	- Absorption Set
ASEL	- CA Current Select
CALF	- Central Apperture Low Frequency
CALFN	- Central Apperture Low Frequency Normalized
CAN	- Central Apperture Normalized
FACT+ -	- Focus Actuator
FEN	- Focus Error Normalized
FSA	- Forward Sence Diode Anode
FSO	- Forward Sense Diode Reference Current
HFSEL	- Select CA Current For HF Reading Purposes
IB1-2	- 3 Spot Push Pull Diode Current
IC1-4	- 3 Spot Push Pull Diode Current
IHF	- CA Current To Remainder Part Of CA Processor
IMON	- Monitor Current
IWREF	- Laser Writing Power Reference
LSRON	- Laser On
NEN	- Enable All Photodiode Currents To Normalizer
NENC	- Enable Central Photodiode Currents To Normalizer
NENS	- Enable Satellite Photodiode Currents To Normalizer
PPN	- Normalized Push Pull Signal
RACT+ -	- Radial Actuator
REGAIN	- Radial Gain Current
REN	- Normalized Radial Error
RINTON	- Read Integrator On
RINTRES	- Read Integrator Reset
RWLASER	- Read/Non Write Laserpower
TLN	- Trackloss Normalized
WINTON	- Write Integrator On
WINTRES	- Write Integrator Reset
WLINTON	- Write Integrator On

START UP PROCEDURE

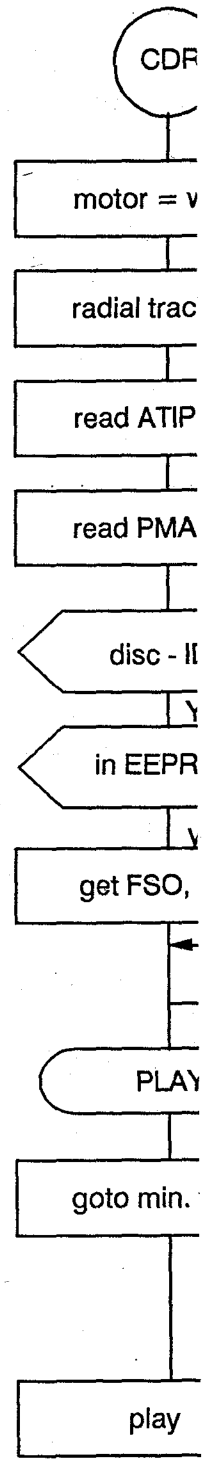
CDR : flowchart start-up

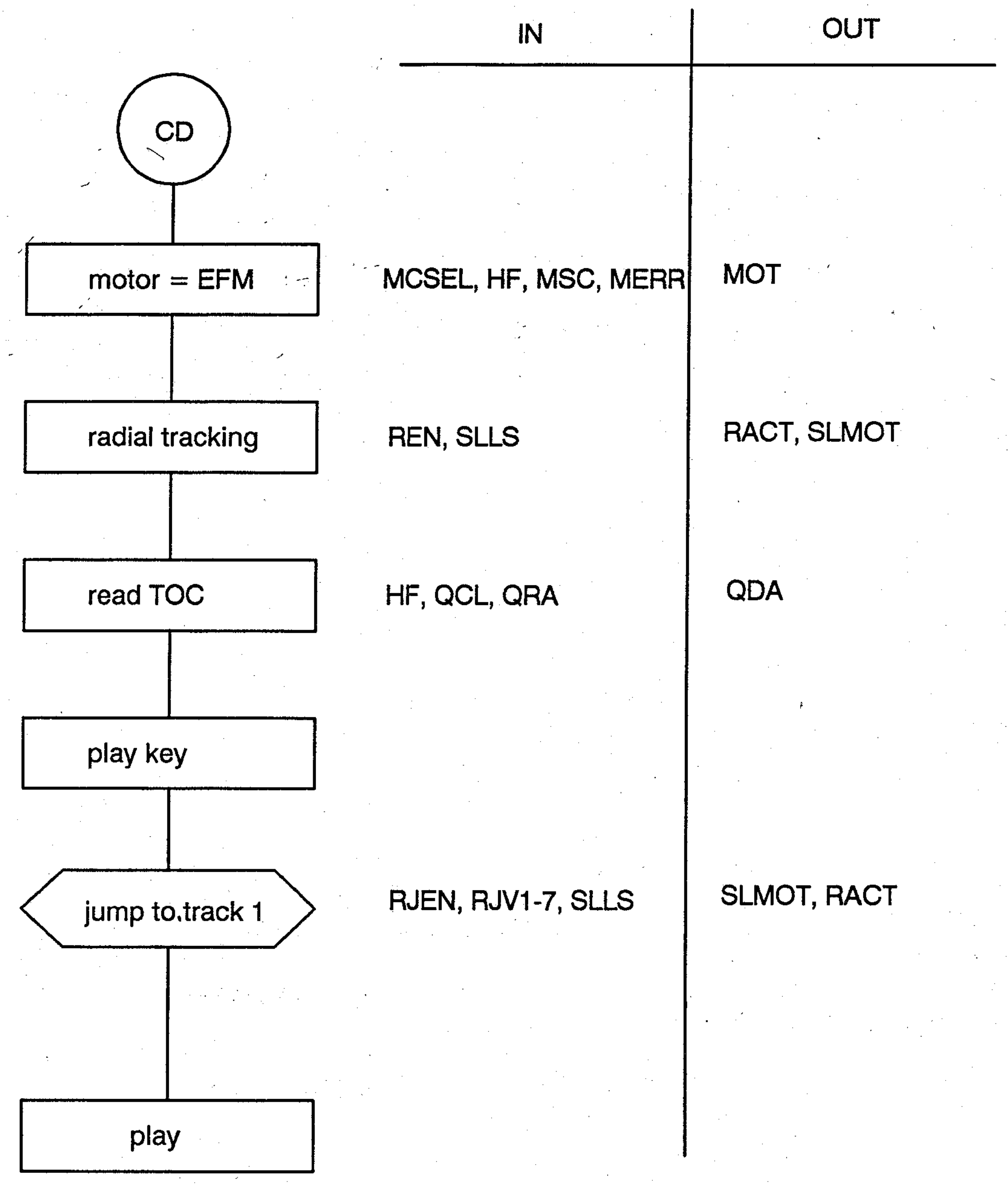

power on
initialise
recovery needed?
N
Y
fix-up PMA
recover
tray open ?
N
Y
close tray
motor = preset
focus on
arm to lead-in
Y
HF ?
N
CD
CDR

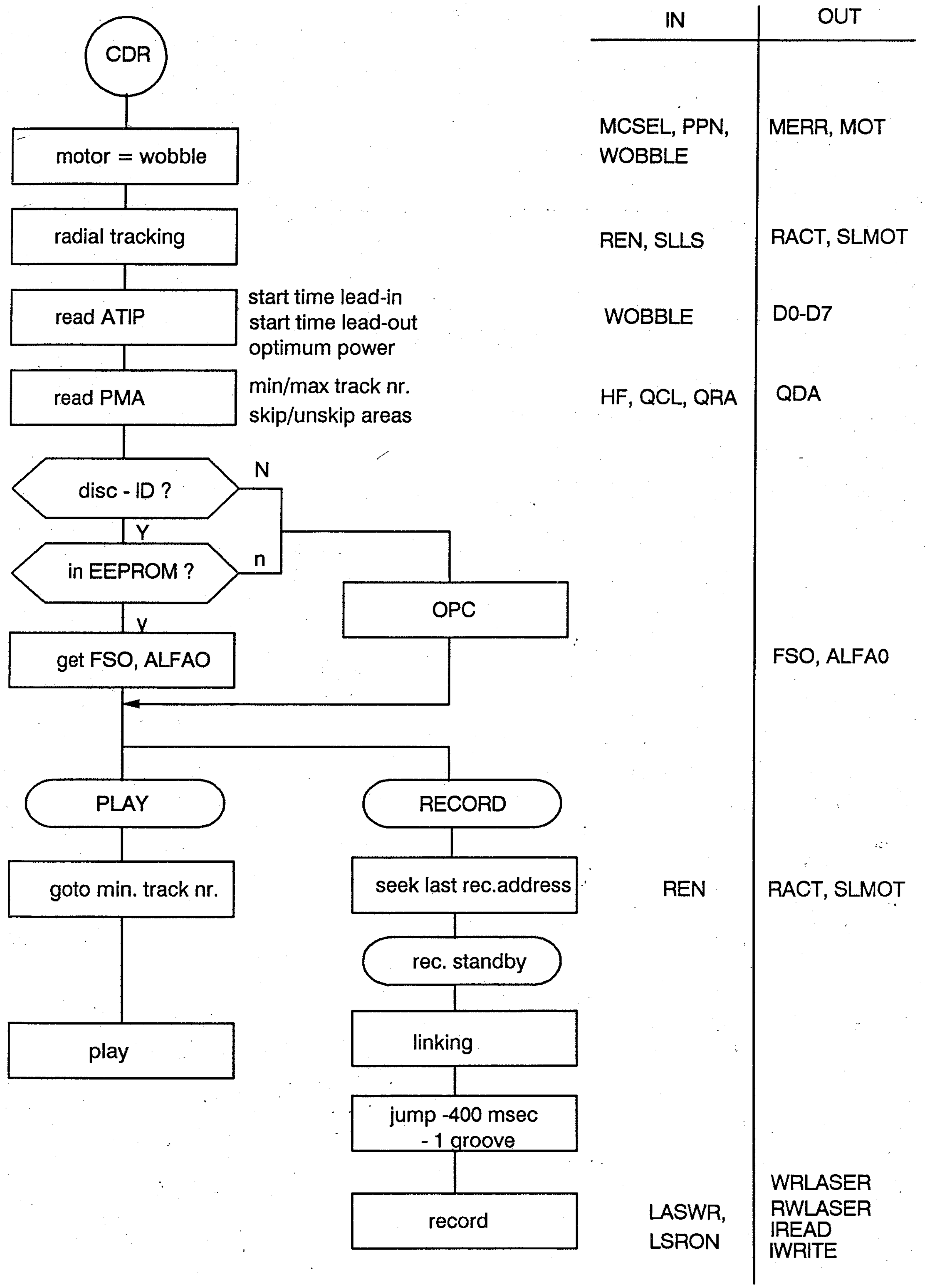
IN	OUT
AC MAINS	Supply Voltages KILL, KL, DRST OFF, RESET
RESET	SRST
	update PMA
TRIN, TROUT	TRMOT, LMOT TRIN
SRDAT, SRCMC	MCESSEL, MOT MREADY
MCESSEL, FOCON CAN, FEN	FACT, FOCOK
SLLS, SLIN	SLMOT, SLBS
HFSEL, IHF	EFMD

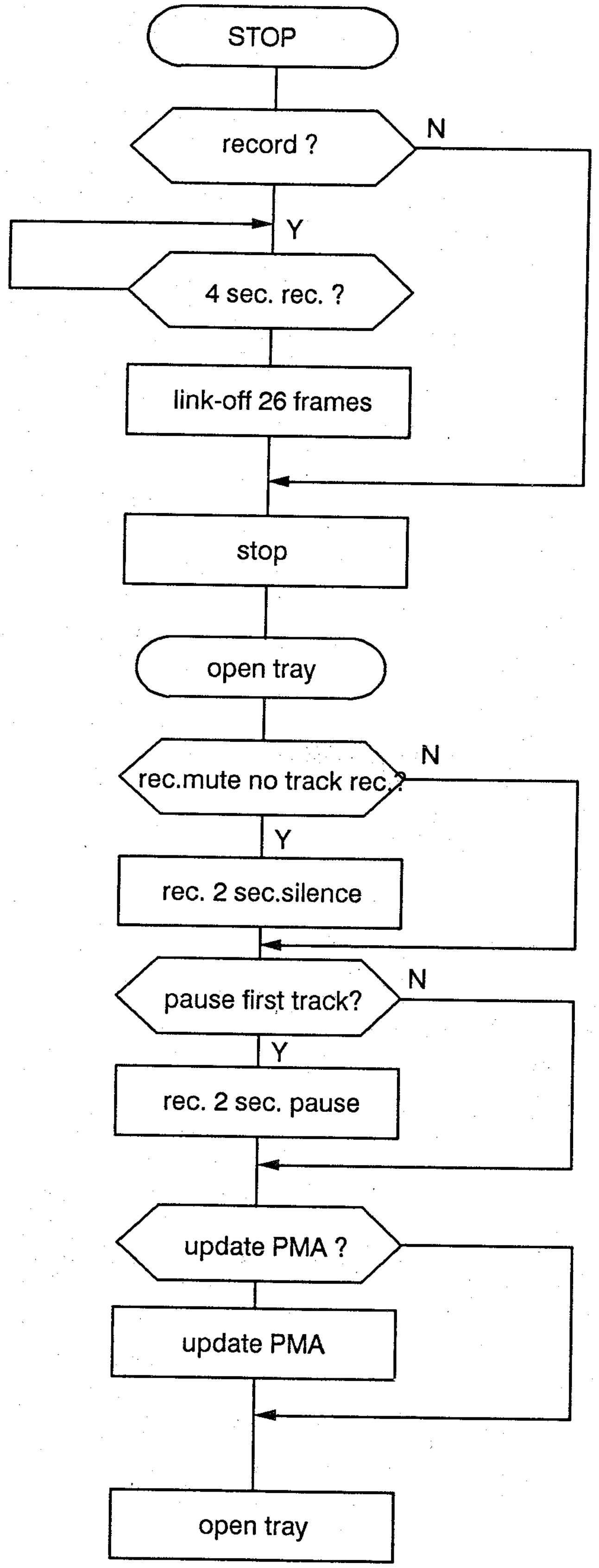

CD
motor = EFM
radial tracking
read TOC
play key
jump to track 1
play

IN	OUT
MCSEL, HF, MSC, MERR	MOT
REN, SLLS	RACT, SLMOT
HF, QCL, QRA	QDA
RJEN, RJV1-7, SLLS	SLMOT, RACT

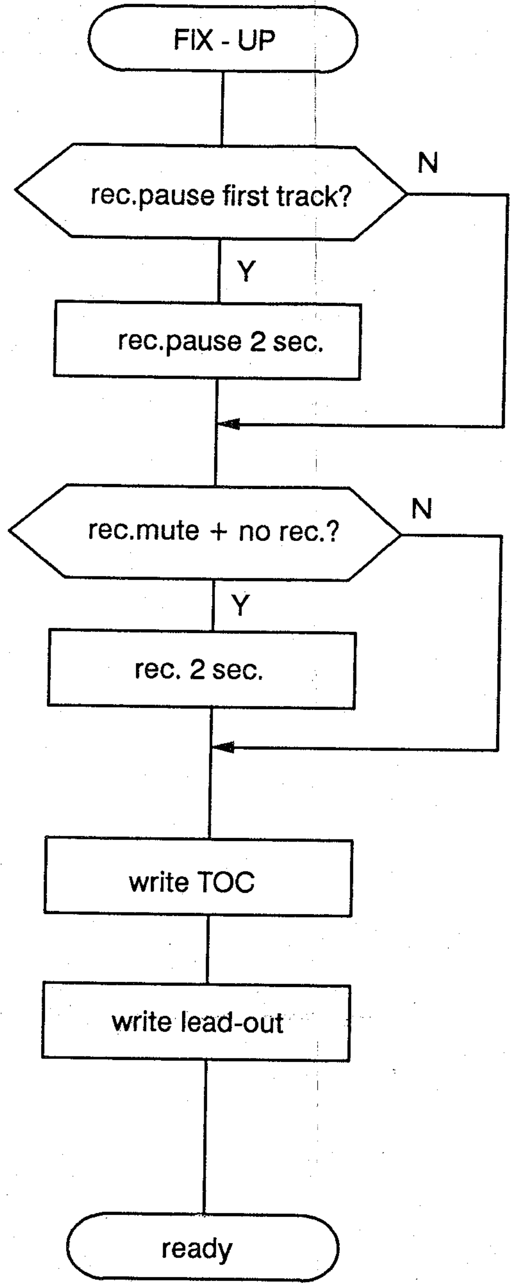

CDR
motor = v
radial trac
read ATIP
read PMA
disc - II
Y
in EEPR
Y
get FSO,
PLAY
goto min.
play

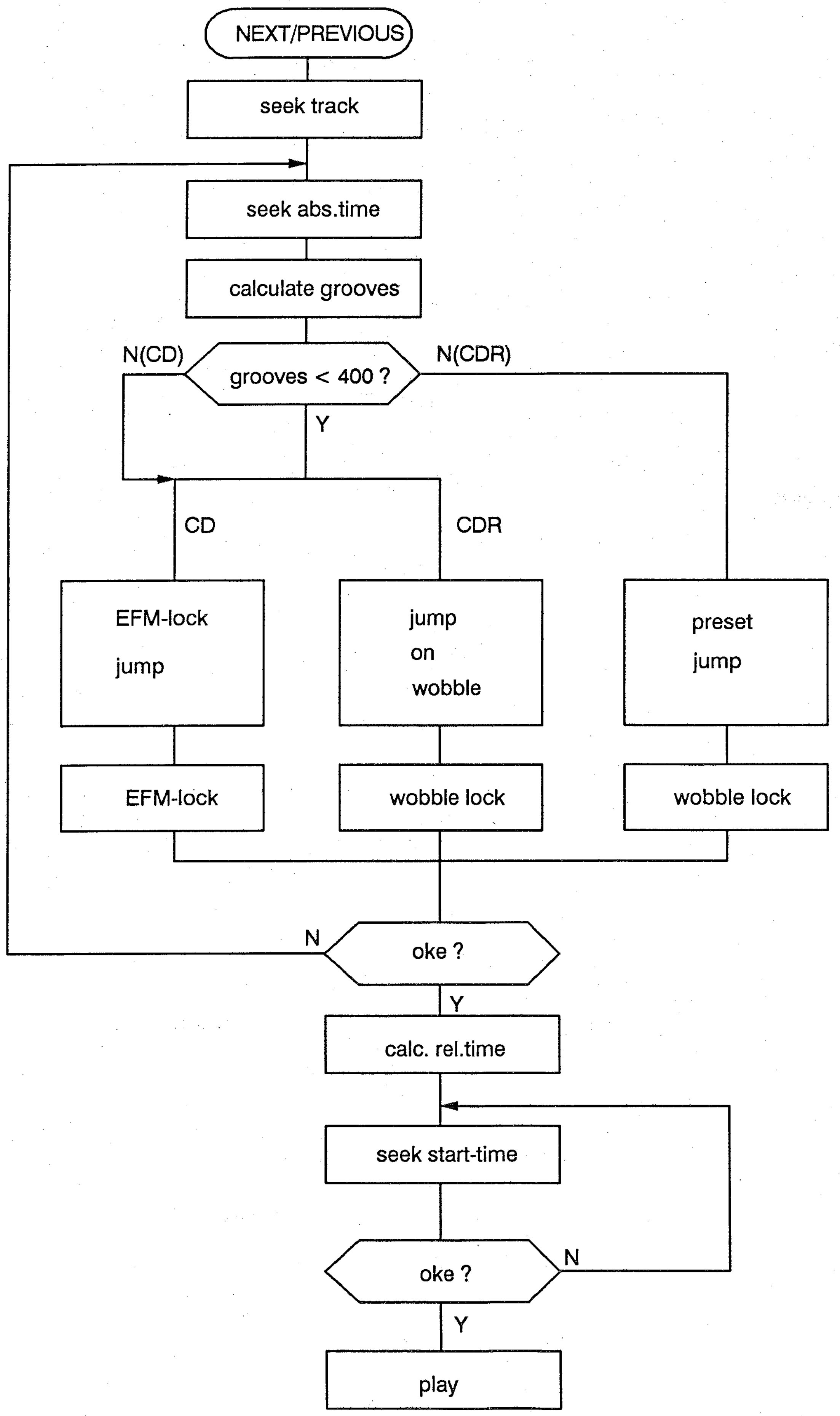

IN
OUT
CD
motor = EFM
MCSEL, HF, MSC, MERR
MOT
radial tracking
REN, SLLS
RACT, SLMOT
read TOC
HF, QCL, QRA
QDA
play key
jump to.track 1
RJEN, RJV1-7, SLLS
SLMOT, RACT
play


IN
OUT
CDR
motor = wobble
MCSEL, PPN, WOBBLE
MERR, MOT
radial tracking
REN, SLLS
RACT, SLMOT
read ATIP
start time lead-in
start time lead-out
optimum power
WOBBLE
D0-D7
read PMA
min/max track nr.
skip/unskip areas
HF, QCL, QRA
QDA
disc - ID ?
N
Y
in EEPROM ?
n
y
OPC
get FSO, ALFAO
FSO, ALFA0
PLAY
RECORD
goto min. track nr.
seek last rec.address
REN
RACT, SLMOT
rec. standby
linking
play
jump -400 msec
- 1 groove
record
LASWR,
LSRON
WRLASER
RWLASER
IREAD
IWRITE


STOP
record ?
N
Y
4 sec. rec. ?
link-off 26 frames
stop
open tray
rec.mute no track rec.?
N
Y
rec. 2 sec.silence
pause first track?
N
Y
rec. 2 sec. pause
update PMA ?
update PMA
open tray

each step:
on error: try 5 X
then open tray
disc destroyed


FIX - UP
rec.pause first track?
N
Y
rec.pause 2 sec.
rec.mute + no rec.?
N
Y
rec. 2 sec.
write TOC
write lead-out
ready


NEXT/PREVIOUS
seek track
seek abs.time
calculate grooves
N(CD)
grooves < 400 ?
N(CDR)
Y
CD
CDR
EFM-lock
jump
jump
on
wobble
preset
jump
EFM-lock
wobble lock
wobble lock
N
oke ?
Y
calc. rel.time
seek start-time
oke ?
N
Y
play

FAULTFINDING DIAGNOSIS

WOSP
-set upside down
Remove bottomplate

- Visual control: are all the solderings ok? (transistors, IC's)
- Check safety resistors
- Check all voltages (on connectors, IC's)
- Check actuator (ohmic)
on flex connector 1003 on WOSP
Radial actuator: points 25 - 28
Focus actuator : points 26 - 27

- Open the set
Remove the clamper

- Actuator is visible:
Press play: turntable motor turns
focus 2x pumping
laserlight
ok

- Actuator is inside:
Press play: turntable motor turns a few seconds
no focus
no laserlight
slide switch is not closed
(wiring or switch)

- Test of turntable motor:
(Black connector) External 1V on motor

- Test of slidemotor:
(Grey connector) External -1V: slide goes outwards
+1V: slide goes inwards

- Test of slidebeginswitch:
(Red connector) When slide is inside: 0Ω

INSTRUCTION TO REPLACE CDM-UNIT OR ENCODER PCB (ONLY FOR SOFTWARE FASE 1)

By replacing the CDM-unit and/or the Encoder PCB problems can occur with wrong OPC values or TOC tables. To prevent these problems, the EEPROM (IC 7481) has to be cleared.
After replacing the CDM-unit and/or the Encoder PCB, this can be done as follows:

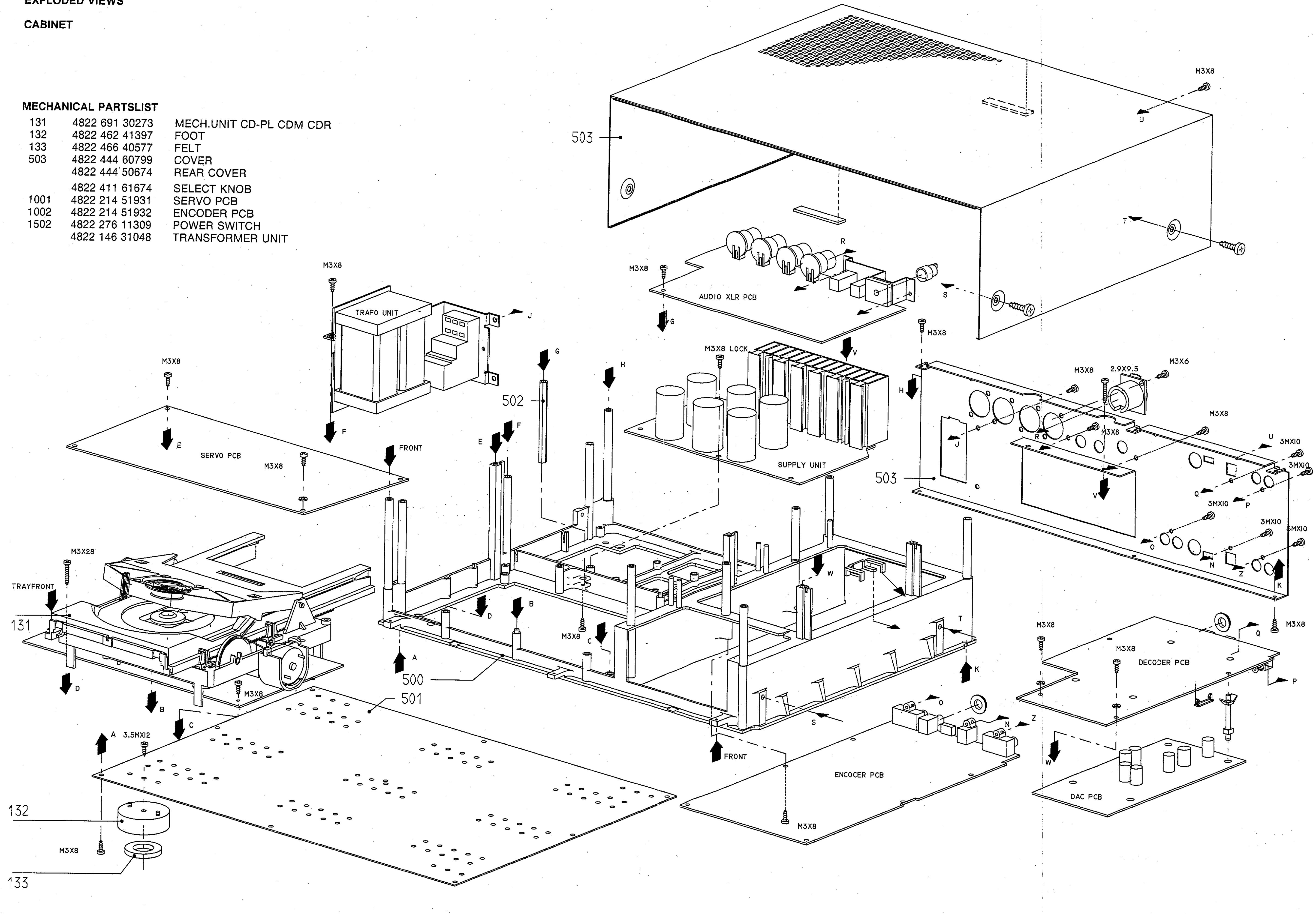
1. Power off.
2. Connect pin 2 (A16) to pin 16 (GND) of IC 7481 (situated on Encoder PCB coordinates F1) by means of e.g. miniature clips.
3. Power on.
4. Press 11 (two times one)
5. Press FIX UP
6. After ± 20 seconds, the display shows 01: the EEPROM has been cleared. If the display shows 00: the EEPROM is defective.
7. Power off.
8. Remove the connection.

EXPLODED VIEWS

CABINET

MECHANICAL PARTSLIST

131	4822 691 30273	MECH.UNIT CD-PL CDM CDR
132	4822 462 41397	FOOT
133	4822 466 40577	FELT
503	4822 444 60799	COVER
	4822 444 50674	REAR COVER
	4822 411 61674	SELECT KNOB
1001	4822 214 51931	SERVO PCB
1002	4822 214 51932	ENCODER PCB
1502	4822 276 11309	POWER SWITCH
	4822 146 31048	TRANSFORMER UNIT

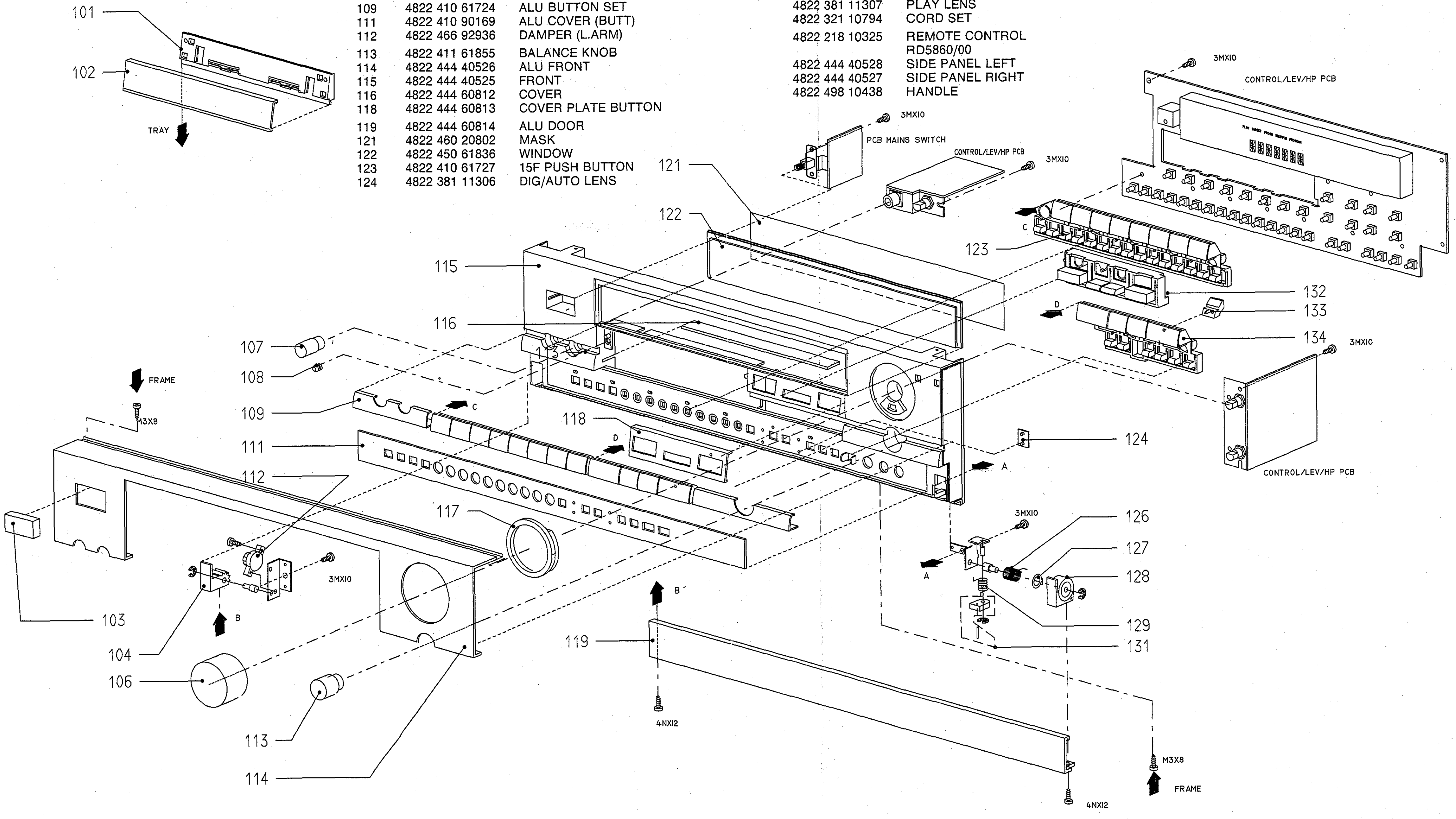

503
M3X8
U
T
R
S
AUDIO XLR PCB
G
V
M3X8
TRAFO UNIT
J
F
M3X8
E
SERVO PCB
M3X8
FRONT
502
G
H
E
F
M3X8 LOCK
SUPPLY UNIT
H
503
M3X8
2.9X9.5
M3X6
J
R
M3X8
U
3MX10
3MX10
Q
P
3MX10
3MX10
3MX10
O
N
Z
K
W
M3X28
TRAYFRONT
131
D
B
D
B
C
A
M3X8
M3X8
C
500
501
T
K
S
FRONT
A
3,5MX12
132
M3X8
133
M3X8
M3X8
DECODER PCB
M3X8
Q
P
O
N
Z
ENCOCER PCB
M3X8
W
DAC PCB

EVA.01297

FRONT

MECHANICAL PARTSLIST

101	4822 444 40524	TRAY FRONT
102	4822 444 40523	ALU TRAY FRONT
103	4822 410 60358	POWER BUTTON
104	4822 402 612407	LEFT ARM
106	4822 413 41699	REC LEVEL KNOB
107	4822 411 61856	PHONES VOLUME KNOB
108	4822 325 60317	GROMMET
109	4822 410 61724	ALU BUTTON SET
111	4822 410 90169	ALU COVER (BUTT)
112	4822 466 92936	DAMPER (L.ARM)
113	4822 411 61855	BALANCE KNOB
114	4822 444 40526	ALU FRONT
115	4822 444 40525	FRONT
116	4822 444 60812	COVER
118	4822 444 60813	COVER PLATE BUTTON
119	4822 444 60814	ALU DOOR
121	4822 460 20802	MASK
122	4822 450 61836	WINDOW
123	4822 410 61727	15F PUSH BUTTON
124	4822 381 11306	DIG/AUTO LENS
126	4822 492 71042	SPRING (R. ARM)
127	4822 492 71043	LEAF SPRING (R. ARM)
128	4822 402 61408	RIGHT ARM
129	4822 492 71041	SPRING (R. ARM)
131	4822 402 61409	MOVEMENT
132	4822 410 61726	4F PUSH BUTTON
133	4822 381 11305	RECORDING LENS
134	4822 410 61725	6F PUSH BUTTON
	4822 381 11307	PLAY LENS
	4822 321 10794	CORD SET
	4822 218 10325	REMOTE CONTROL RD5860/00
	4822 444 40528	SIDE PANEL LEFT
	4822 444 40527	SIDE PANEL RIGHT
	4822 498 10438	HANDLE

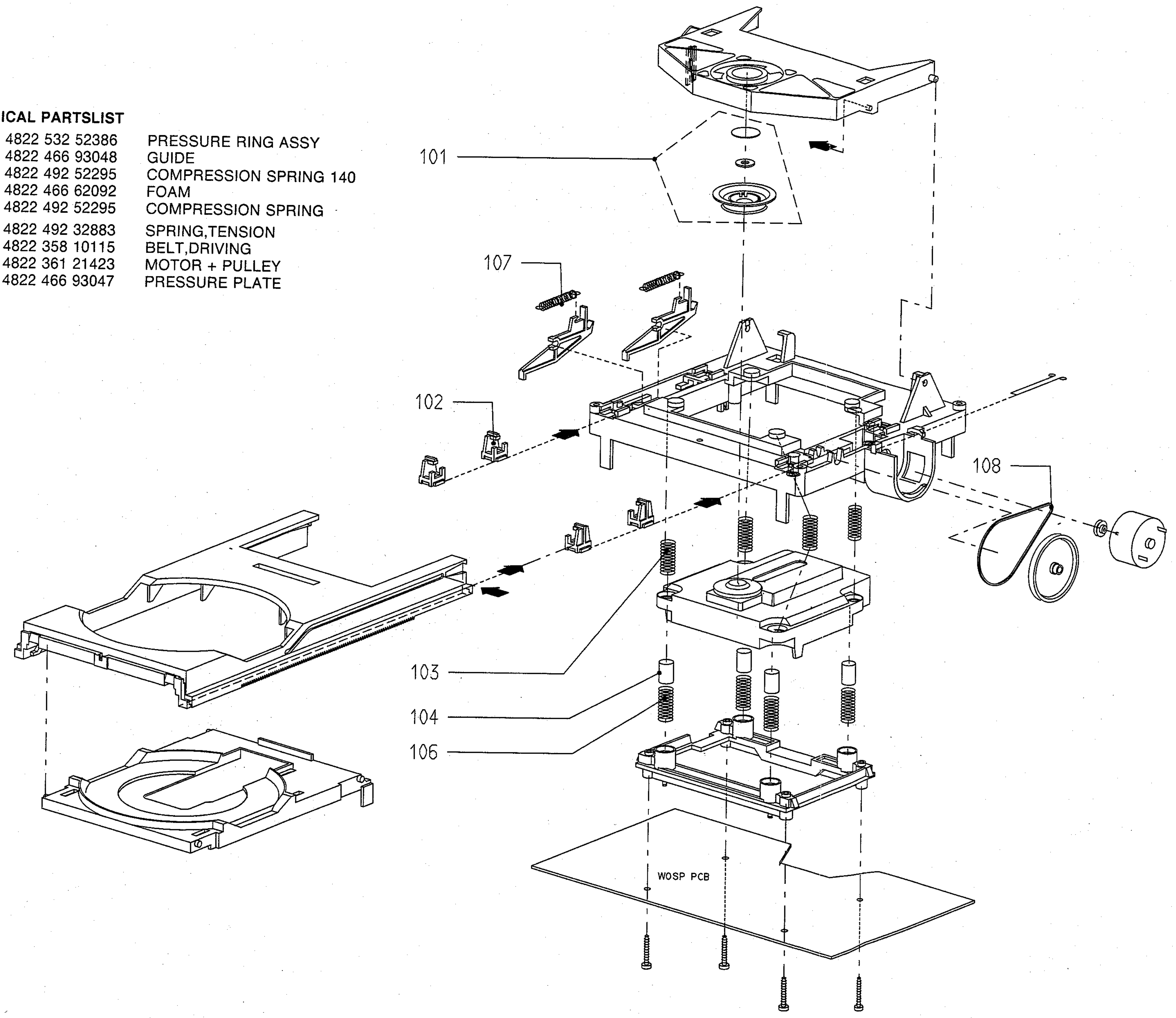

101
102
TRAY
121
122
115
116
107
108
FRAME
M3X8
109
111
112
117
118
C
D
3MX10
103
104
B
106
113
114
119
B
4NX12
PCB MAINS SWITCH
CONTROL/LEV/HP PCB
3MX10
CONTROL/LEV/HP PCB
123
C
132
133
D
134
3MX10
CONTROL/LEV/HP PCB
124
A
3MX10
126
127
A
128
129
131
M3X8
FRAME
4NX12

EVA.01299

LOADING + CDM

MECHANICAL PARTSLIST

101	4822 532 52386	PRESSURE RING ASSY
102	4822 466 93048	GUIDE
103	4822 492 52295	COMPRESSION SPRING 140
104	4822 466 62092	FOAM
106	4822 492 52295	COMPRESSION SPRING
107	4822 492 32883	SPRING,TENSION
108	4822 358 10115	BELT,DRIVING
	4822 361 21423	MOTOR + PULLEY
	4822 466 93047	PRESSURE PLATE



EVA.01295

SERVO PANEL

Miscellaneous

1001	4822 214 51931	SERVO PCB

Crystal

1500	4822 242 73759	12MHz

2500	5322 122 32658	22pF 5% 50V
2501	5322 122 32658	22pF 5% 50V
2502	5322 124 21643	22µF 20% 40V
2503	4822 122 33809	22nF 20% 50V
2521	4822 122 33175	2,2nF 20% 50V
2522	4822 122 33809	22nF 20% 50V
2523	4822 122 33809	22nF 20% 50V
2524	5322 122 33809	22nF 20% 50V
2525	4822 122 33809	22nF 20% 50V
2526	5322 121 42661	330nF 5% 63V
2527	4822 122 33809	22nF 20% 50V
2528	4822 122 33809	22nF 20% 50V
2540	4822 122 33809	22nF 20% 50V
2541	4822 122 33496	100nF 10% 63V
2542	4822 122 33543	15nF 10% 50V
2543	4822 122 33496	100nF 10% 63V
2560	4822 122 32891	68nF 10% 63V
2561	4822 122 33891	3,3nF 10% 63V
2562	5322 122 32531	100pF 5% 50V
2563	4822 122 33177	10nF 20% 50V
2564	4822 122 32575	220pF 10% 500V
2565	4822 122 33809	22nF 20% 50V
2566	4822 122 33809	22nF 20% 50V
2567	4822 122 32542	47nF 10% 63V
2568	5322 122 32531	100pF 5% 50V
2580	4822 122 33809	22nF 20% 50V
2581	4822 122 33809	22nF 20% 50V
2582	5322 122 34123	1nF 10% 50V
2583	4822 122 33809	22nF 20% 50V
2584	4822 122 33809	22nF 20% 50V
2600	4822 122 33809	22nF 20% 50V
2601	4822 122 33809	22nF 20% 50V
2602	5322 122 32531	100pF 5% 50V
2603	4822 122 33496	100nF 10% 63V
2604	4822 121 41854	150nF 5% 63V
2605	4822 122 33175	2,2nF 20% 50V
2606	4822 122 33496	100nF 10% 63V
2620	5322 124 21643	22µF 20% 40V
2630	4822 121 51252	470nF 5% 63V
2640	4822 121 43901	4,7nF 5% 50V
2641	4822 121 43867	22nF 5% 50V
2642	5322 122 32448	10pF 5% 50V
2645	4822 122 33496	100nF 10% 63V
2650	4822 122 33177	10nF 20% 50V
2651	4822 122 33809	22nF 20% 50V
2652	4822 122 33809	22nF 20% 50V
2653	4822 122 33496	100nF 10% 63V
2654	4822 122 33496	100nF 10% 63V
2660	4822 124 40272	33µF 20% 16V
2661	4822 122 33809	22nF 20% 50V
2662	4822 124 40272	33µF 20% 16V
2663	4822 122 33809	22nF 20% 50V
2664	4822 124 41596	22µF 20% 50V
2665	4822 122 33809	22nF 20% 50V
2666	4822 124 41596	22µF 20% 50V
2667	4822 122 33809	22nF 20% 50V
2669	5322 124 21643	22µF 20% 40V
2671	5322 124 21643	22µF 20% 40V
2680	5322 122 31863	330pF 5% 50V
2681	5322 122 31863	330pF 5% 50V
2682	4822 122 33809	22nF 20% 50V
2710	4822 122 33809	22nF 20% 50V
2711	4822 122 33809	22nF 20% 50V
2712	5322 122 32658	22pF 5% 50V
2713	5322 122 32658	22pF 5% 50V
2730	4822 122 33809	22nF 20% 50V
2740	4822 122 31775	680pF 5% 50V
2751	5322 121 42386	100nF 5% 63V
2752	4822 121 43869	68nF 5% 50V
2770	5322 121 42661	330nF 5% 63V
2771	5322 122 32659	33pF 5% 50V
2772	4822 122 33809	22nF 20% 50V
2773	4822 122 33809	22nF 20% 50V
2774	4822 122 33809	22nF 20% 50V
2775	4822 122 33809	22nF 20% 50V
2790	4822 122 33809	22nF 20% 50V
2791	4822 122 33543	15nF 10% 50V
2792	4822 122 33809	22nF 20% 50V
2793	4822 122 33809	22nF 20% 50V
2794	4822 122 33496	100nF 10% 63V
2795	4822 121 43526	47nF 5% 100V
2810	4822 122 33809	22nF 20% 50V
2811	4822 122 33809	22nF 20% 50V
2812	4822 122 33809	22nF 20% 50V
2814	4822 122 33809	22nF 20% 50V
2830	4822 124 40272	33µF 20% 16V
2850	4822 122 33342	33nF 10% 50V
2851	5322 121 42661	330nF 5% 63V
2852	4822 122 33809	22nF 20% 50V
2853	4822 122 33809	22nF 20% 50V
2854	4822 122 33496	100nF 10% 63V
2870	4822 122 33809	22nF 20% 50V
2871	4822 122 33809	22nF 20% 50V
2872	5322 122 32531	100pF 5% 50V
2873	4822 122 32542	47nF 10% 63V
2874	4822 122 32575	220pF 10% 500V

3500	4822 050 21002	1k 1% 0,6W
3501	4822 050 21002	1k 1% 0,6W
3502	4822 052 10108	1Ω 5% 0,33W
3503	4822 050 21003	10k 1% 0,6W
3504	4822 050 21003	10k 1% 0,6W
3506	4822 050 21003	10k 1% 0,6W
3507	4822 050 21003	10k 1% 0,6W
3508	4822 050 21003	10k 1% 0,6W
3509	4822 050 21003	10k 1% 0,6W
3510	4822 050 22203	22k 1% 0,6W
3511	4822 050 22203	22k 1% 0,6W
3512	4822 050 22203	22k 1% 0,6W
3513	4822 050 21002	1k 1% 0,6W
3514	4822 051 10101	100Ω 2% 0,25W
3515	4822 050 21003	10k 1% 0,6W
3516	4822 050 21003	10k 1% 0,6W
3517	4822 050 21003	10k 1% 0,6W
3518	4822 050 21003	10k 1% 0,6W
3519	4822 050 21003	10k 1% 0,6W
3520	4822 050 28203	82k 1% 0,6W
3521	4822 116 52235	1M 5% 0,5W
3522	4822 050 25604	560k 1% 0,6W
3523	4822 050 21804	180k 1% 0,6W
3524	4822 116 52235	1M 5% 0,5W
3525	4822 050 22704	270k 1% 0,6W
3526	4822 051 20274	270k 5% 0,1W
3527	4822 116 52272	330k 5% 0,5W
3528	4822 050 21204	120k 1% 0,6W
3529	4822 050 24703	47k 1% 0,6W
3530	4822 051 20105	1M 5% 0,1W
3531	4822 116 52244	15k 5% 0,5W
3532	4822 051 20473	47k 5% 0,1W
3533	4822 050 25603	56k 1% 0,6W
3534	4822 051 20473	47k 5% 0,1W
3535	4822 051 20682	6k8 5% 0,1W
3542	4822 116 52234	100k 5% 0,5W
3545	4822 050 22003	20k 1% 0,6W
3546	4822 116 52264	27k 5% 0,5W
3547	4822 050 24704	470k 1% 0,6W
3550	4822 116 52235	1M 5% 0,5W
3551	4822 050 21003	10k 1% 0,6W
3552	4822 050 13303	33k 1% 0,4W
3560	4822 050 13303	33k 1% 0,4W
3561	4822 050 22204	220k 1% 0,6W
3562	4822 050 25603	56k 1% 0,6W
3563	4822 050 22204	220k 1% 0,6W
3564	4822 050 13303	33k 1% 0,4W
3565	4822 050 25603	56k 1% 0,6W
3566	4822 050 22203	22k 1% 0,6W
3567	4822 050 13303	33k 1% 0,4W
3568	4822 050 23902	3k9 1% 0,6W
3569	4822 050 23902	3k9 1% 0,6W
3570	4822 050 26803	68k 1% 0,6W
3571	4822 050 24703	47k 1% 0,6W
3572	4822 050 21504	150k 1% 0,6W
3573	4822 050 21804	180k 1% 0,6W
3574	4822 116 52264	27k 5% 0,5W
3575	4822 050 22203	22k 1% 0,6W
3576	4822 050 22203	22k 1% 0,6W
3577	4822 050 21204	120k 1% 0,6W
3578	4822 050 21504	150k 1% 0,6W
3580	4822 050 13303	33k 1% 0,4W
3581	4822 050 24703	47k 1% 0,6W
3582	4822 116 52235	1M 5% 0,5W
3583	4822 116 52224	470Ω 5%0,5W
3584	4822 052 10108	1Ω 5% 0,33W
3585	4822 052 10108	1Ω 5% 0,33W
3586	4822 050 21003	10k 1% 0,6W
3600	4822 050 22203	22k 1% 0,6W
3601	4822 050 21003	10k 1% 0,6W
3602	4822 050 22203	22k 1% 0,6W
3603	4822 050 22704	270k 1% 0,6W
3604	4822 050 21003	10k 1% 0,6W
3605	4822 050 22203	22k 1% 0,6W
3606	4822 050 21003	10k 1% 0,6W
3607	4822 050 24702	4k7 1% 0,6W
3608	4822 050 22203	22k 1% 0,6W
3609	4822 050 26803	68k 1% 0,6W
3610	4822 050 22204	220k 1% 0,6W
3611	4822 116 52234	100k 5% 0,5W
3612	4822 050 13303	33k 1% 0,4W
3614	4822 050 21203	12k 1% 0,6W
3615	4822 050 13303	33k 1% 0,4W
3616	4822 050 22203	22k 1% 0,6W
3617	4822 050 24704	470k 1% 0,6W
3620	4822 050 22203	22k 1% 0,6W
3621	4822 052 10108	1Ω 5% 0,33W
3622	4822 052 10108	1Ω 5% 0,33W
3623	4822 052 10108	1Ω 5% 0,33W
3624	4822 052 10108	1Ω 5% 0,33W
3625	4822 052 10108	1Ω 5% 0,33W
3626	4822 052 10108	1Ω 5% 0,33W
3630	4822 050 26804	680k 1% 0,6W
3631	4822 050 26804	680k 1% 0,6W
3632	4822 050 26804	680k 1% 0,6W
3640	4822 050 28203	82k 1% 0,6W
3641	4822 050 13303	33k 1% 0,4W
3642	4822 116 52235	1M 5% 0,5W
3643	4822 050 25603	56k 1% 0,6W
3644	4822 116 52264	27k 5% 0,5W
3645	4822 116 52234	100k 5% 0,5W
3646	4822 050 24704	470k 1% 0,6W
3647	4822 116 52234	100k 5% 0,5W
3648	4822 116 52264	27k 5% 0,5W
3649	4822 052 10229	22Ω 5% 0,33W
3650	4822 050 23902	3k9 1% 0,6W
3651	4822 050 21203	12k 1% 0,6W
3652	4822 050 21203	12k 1% 0,6W
3653	4822 052 10108	1Ω 5% 0,33W
3654	4822 050 21203	12k 1% 0,6W
3655	4822 050 21203	12k 1% 0,6W
3656	4822 052 10108	1Ω 5% 0,33W
3657	4822 052 10229	22Ω 5% 0,33W
3680	4822 050 21003	10k 1% 0,6W
3681	4822 050 22204	220k 1% 0,6W
3682	4822 050 21002	1k 1% 0,6W
3683	4822 050 21002	1k 1% 0,6W
3684	4822 116 52244	15k 5% 0,5W
3685	4822 050 28203	82k 1% 0,6W
3686	4822 050 28203	82k 1% 0,6W
3687	4822 116 52244	15k 5% 0,5W
3688	4822 050 21002	1k 1% 0,6W
3689	4822 050 21002	1k 1% 0,6W
3690	4822 050 21003	10k 1% 0,6W
3691	4822 050 21003	10k 1% 0,6W
3692	4822 050 21002	1k 1% 0,6W
3693	4822 050 22203	22k 1% 0,6W
3694	4822 050 22203	22k 1% 0,6W
3695	4822 050 22203	22k 1% 0,6W
3696	4822 050 26803	68k 1% 0,6W
3697	4822 050 21002	1k 1% 0,6W
3710	4822 050 21002	1k 1% 0,6W
3711	4822 050 22204	220k 1% 0,6W
3712	4822 050 21003	10k 1% 0,6W
3713	4822 050 21002	1k 1% 0,6W
3715	4822 050 21003	10k 1% 0,6W
3740	4822 050 24304	430k 5% 0,125W
3741	4822 050 23903	39k 5% 0,125W
3742	4822 050 21203	12k 1% 0,6W
3743	4822 116 52244	15k 5% 0,5W
3744	4822 050 15602	5k6 1% 0,4W
3745	4822 050 15602	5k6 1% 0,4W
3750	4822 050 22704	270k 1% 0,6W
3751	4822 116 52224	470Ω 5% 0,5W
3752	4822 050 21204	120k 5% 0,125W
3753	4822 050 21203	12k 5% 0,125W
3754	4822 050 22704	270k 5% 0,125W
3755	4822 050 21002	1k 1% 0,6W
3756	4822 050 27504	750k 5% 0,125W
3757	4822 050 13303	33k 1% 0,4W
3770	4822 050 26803	68k 1% 0,6W
3771	4822 050 23903	39k 5% 0,125W
3772	4822 050 24703	47k 1% 0,6W
3773	4822 116 52244	15k 5% 0,5W
3774	4822 052 10108	1Ω 5% 0,33W
3775	4822 116 52224	470Ω 5% 0,5W
3776	4822 116 52224	470Ω 5% 0,5W
3777	4822 116 52244	15k 5% 0,5W
3778	4822 052 10108	1Ω 5% 0,33W
3779	4822 050 23903	39k 5% 0,125W

3791	4822 050 15602	5k6 1% 0,4W
3792	4822 050 21002	1k 1% 0,6W
3793	4822 050 13303	33k 1% 0,4W
3794	4822 050 13303	33k 1% 0,4W
3795	4822 050 21003	10k 1% 0,6W
3796	4822 116 52234	100k 5% 0,5W
3797	4822 116 52272	330k 5% 0,5W
3799	4822 116 52235	1M 5% 0,5W
3800	4822 116 52235	1M 5% 0,5W
3801	4822 116 52272	330k 5% 0,5W
3810	4822 050 21003	10k 1% 0,6W
3811	4822 050 21003	10k 1% 0,6W
3813	4822 050 21804	180k 1% 0,6W
3814	4822 050 21804	180k 1% 0,6W
3830	4822 116 52234	100k 5% 0,5W
3831	4822 050 28203	82k 1% 0,6W
3832	4822 050 21002	1k 1% 0,6W
3833	4822 116 52234	100k 5% 0,5W
3834	4822 050 22202	2k2 1% 0,6W
3835	4822 050 24703	47k 1% 0,6W
3836	4822 050 24703	47k 1% 0,6W
3837	4822 050 24703	47k 1% 0,6W
3838	4822 050 24703	47k 1% 0,6W
3850	4822 116 52244	15k 5% 0,5W
3851	4822 116 52234	100k 5% 0,5W
3852	4822 050 15602	5k6 1% 0,4W
3853	4822 116 52272	330k 5% 0,5W
3854	4822 050 21002	1k 1% 0,6W
3855	4822 050 21003	10k 1% 0,6W
3856	4822 050 21003	10k 1% 0,6W
3857	4822 050 24703	47k 1% 0,6W
3858	4822 050 21203	12k 1% 0,6W
3859	4822 050 21003	10k 1% 0,6W
3860	4822 050 21003	10k 1% 0,6W
3861	4822 050 24703	47k 1% 0,6W
3862	4822 050 21203	12k 1% 0,6W
3863	4822 050 24703	47k 1% 0,6W
3864	4822 052 10229	22Ω 5% 0,33W
3865	4822 052 10108	1Ω 5% 0,33W
3866	4822 052 10108	1Ω 5% 0,33W
3867	4822 050 22203	22k 1% 0,6W
3871	4822 116 52264	27k 5% 0,5W
3872	4822 050 26803	68k 1% 0,6W
3873	4822 116 52234	100k 5% 0,5W
3874	4822 050 22704	270k 1% 0,6W
3875	4822 050 22203	22k 1% 0,6W
3876	4822 050 21002	1k 1% 0,6W
3877	4822 050 21002	1k 1% 0,6W
3880	4822 050 24703	47k 1% 0,6W
3881	4822 050 22203	22k 1% 0,6W
3882	4822 116 52272	330k 5% 0,5W
3883	4822 050 24703	47k 1% 0,6W
3884	4822 050 22704	270k 1% 0,6W
3885	4822 050 24703	47k 1% 0,6W
3886	4822 050 21504	150k 1% 0,6W
4001	4822 051 10008	Chip jumper
4002	4822 051 10008	Chip jumper
4003	4822 051 10008	Chip jumper
4004	4822 051 10008	Chip jumper
4005	4822 051 10008	Chip jumper
4006	4822 051 10008	Chip jumper
4007	4822 051 10008	Chip jumper
4008	4822 051 10008	Chip jumper
4009	4822 051 10008	Chip jumper
4010	4822 051 10008	Chip jumper

4011	4822 051 10008	Chip jumper
4012	4822 051 10008	Chip jumper
4013	4822 051 10008	Chip jumper
4014	4822 051 10008	Chip jumper
4015	4822 051 10008	Chip jumper
4016	4822 051 10008	Chip jumper
4017	4822 051 10008	Chip jumper
4018	4822 051 10008	Chip jumper
4019	4822 051 10008	Chip jumper
4020	4822 051 10008	Chip jumper
4021	4822 051 10008	Chip jumper
4022	4822 051 10008	Chip jumper
4023	4822 051 10008	Chip jumper
4024	4822 051 10008	Chip jumper
4025	4822 051 10008	Chip jumper
4026	4822 051 10008	Chip jumper
4027	4822 051 10008	Chip jumper
4028	4822 051 10008	Chip jumper
4029	4822 051 10008	Chip jumper
4030	4822 051 10008	Chip jumper
4031	4822 051 10008	Chip jumper
4032	4822 051 10008	Chip jumper
4033	4822 051 10008	Chip jumper
4034	4822 051 10008	Chip jumper
4035	4822 051 10008	Chip jumper
4036	4822 051 10008	Chip jumper
4037	4822 051 10008	Chip jumper
4038	4822 051 10008	Chip jumper
4039	4822 051 10008	Chip jumper
4040	4822 051 10008	Chip jumper
4041	4822 051 10008	Chip jumper
4042	4822 051 10008	Chip jumper
4043	4822 051 10008	Chip jumper
4044	4822 051 10008	Chip jumper
4045	4822 051 10008	Chip jumper
4046	4822 051 10008	Chip jumper
4047	4822 051 10008	Chip jumper
4049	4822 051 10008	Chip jumper
4050	4822 051 10008	Chip jumper
4051	4822 051 10008	Chip jumper
4052	4822 051 10008	Chip jumper
4053	4822 051 10008	Chip jumper
4054	4822 051 10008	Chip jumper
4055	4822 051 10008	Chip jumper

6530	4822 130 30621	1N4148
6531	4822 130 30621	1N4148
6540	4822 130 30621	1N4148
6561	4822 130 30621	1N4148
6562	4822 130 30621	1N4148
6563	4822 130 30621	1N4148
6580	4822 130 30861	BZX79-C7V5
6581	4822 130 30861	BZX79-C7V5
6600	4822 130 30621	1N4148
6601	4822 130 30621	1N4148
6602	4822 130 30621	1N4148
6603	4822 130 30621	1N4148
6604	4822 130 30621	1N4148
6605	4822 130 30621	1N4148
6606	5322 130 34563	BZX79-C2V7
6680	4822 130 30621	1N4148
6681	4822 130 30621	1N4148
6740	4822 130 34174	BZX79-C4V7
6741	4822 130 34174	BZX79-C4V7
6750	4822 130 34174	BZX79-C4V7

6751	4822 130 34174	BZX79-C4V7
6790	4822 130 30621	1N4148
6791	4822 130 30621	1N4148
6792	4822 130 30621	1N4148
6830	4822 130 30621	1N4148
6831	4822 130 30621	1N4148
6832	4822 130 30621	1N4148
6833	4822 130 30621	1N4148
6850	4822 130 34174	BZX79-C4V7
6851	4822 130 34174	BZX79-C4V7
6870	4822 130 31981	BZX79-C3V9
6871	4822 130 31981	BZX79-C3V9
6872	4822 130 31981	BZX79-C3V9
6873	4822 130 31981	BZX79-C3V9
6874	4822 130 30621	1N4148
7500	4822 209 30737	SC87C51CCN40
7501	4822 209 30731	MC74HC03AD
7520	4822 209 30725	MC34002BD
7521	5322 209 82941	LM358D
7522	4822 209 30734	MC74HC4053N
7540	4822 209 30733	MC74HC164N
7541	4822 209 30725	MC34002BD
7542	5322 130 44656	BC264D
7560	4822 209 30734	MC74HC4053N
7561	4822 130 61207	BC848
7562	5322 130 42012	BC858
7563	5322 209 70225	LM393D
7580	5322 130 44656	BC264D
7581	5322 130 44647	BC368
7582	5322 130 44593	BC369
7600	5322 130 42012	BC858
7601	4822 209 30725	MC34002BD
7602	4822 130 61207	BC848
7630	4822 130 61207	BC848
7640	5322 130 44656	BC264D

7641	5322 130 44656	BC264D
7642	4822 209 72587	TCA0372DP2
7680	4822 209 30732	LM319D
7681	4822 130 61207	BC848
7682	5322 130 42012	BC858
7683	4822 130 61207	BC848
7684	5322 130 42012	BC858
7685	4822 130 61207	BC848
7711	4822 130 61207	BC848
7712	4822 130 61207	BC848
7713	4822 209 30739	MC74HC04AD
7730	4822 209 30734	MC74HC4053N
7731	5322 209 73011	PC74HC4520P
7740	4822 209 30734	MC74HC4053N
7741	4822 209 30738	TL084CN
7750	4822 209 30734	MC74HC4053N
7770	4822 130 61207	BC848
7771	5322 130 42012	BC858
7772	4822 130 40995	BD438
7773	4822 130 40982	BD437
7790	4822 209 30733	MC74HC164N
7791	4822 209 30738	TL084CN
7792	5322 130 42012	BC858
7810	4822 209 30739	MC74HC04AD
7811	4822 209 30734	MC74HC4053N
7830	4822 209 70941	MC34084P
7850	5322 130 42012	BC858
7851	5322 130 42012	BC858
7852	4822 209 72587	TCA0372DP2
7870	5322 209 70225	LM393D
7871	4822 209 30734	MC74HC4053N
7880	5322 130 42012	BC858
7881	4822 130 61207	BC848

Miscellaneous

1002	4822 214 51932	ENCODER PCB

Crystal

1424	4822 242 71349	11,2896 MHz
1480	4822 242 73759	12MHz

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2300	5322 122 32531	100pF 5% 50V
2301	5322 122 32531	100pF 5% 50V
2304	5322 122 32531	100pF 5% 50V
2305	5322 122 32531	100pF 5% 50V
2306	4822 124 41525	100µF 20% 25V
2307	4822 124 41525	100µF 20% 25V
2308	4822 122 33496	100nF 10% 63V
2309	4822 122 33496	100nF 10% 63V
2340	4822 122 33496	100nF 10% 63V
2341	4822 122 33496	100nF 10% 63V
2342	4822 122 33496	100nF 10% 63V
2343	4822 122 33496	100nF 10% 63V
2344	4822 122 33496	100nF 10% 63V
2345	4822 122 33496	100nF 10% 63V
2346	4822 122 33496	100nF 10% 63V
2347	4822 122 33809	22nF 20% 50V
2348	4822 122 33809	22nF 20% 50V
2349	4822 122 33809	22nF 20% 50V
2350	4822 122 33809	22nF 20% 50V
2351	4822 124 40272	33µF 20% 16V
2352	4822 124 40272	33µF 20% 16V
2353	4822 124 40272	33µF 20% 16V
2354	4822 124 40272	33µF 20% 16V
2355	4822 124 40272	33µF 20% 16V
2356	4822 121 43866	10nF 5% 50V
2357	4822 121 43866	10nF 5% 50V
2358	4822 122 33177	10nF 20% 50V
2359	4822 122 33177	10nF 20% 50V
2360	4822 124 40435	10µF 20% 50V
2361	4822 124 41576	2,2µF 20% 50V
2370	4822 122 33809	22nF 20% 50V
2371	4822 124 40272	33µF 20% 16V
2372	4822 122 33809	22nF 20% 50V
2373	4822 124 40272	33µF 20% 16V
2374	4822 122 33809	22nF 20% 50V
2375	4822 124 40272	33µF 20% 16V
2376	4822 124 40272	33µF 20% 16V
2377	4822 122 33809	22nF 20% 50V
2378	4822 122 33809	22nF 20% 50V
2379	4822 124 40272	33µF 20% 16V
2380	4822 121 51356	180nF 10% 63V
2381	4822 124 41576	2,2µF 20% 50V
2382	5322 122 32448	10pF 5% 50V
2383	4822 122 32575	220pF 10% 500V
2384	5322 122 32659	33pF 5% 50V
2385	5322 122 32659	33pF 5% 50V
2386	4822 122 33809	22nF 20% 50V
2387	4822 122 33809	22nF 20% 50V
2400	4822 122 33809	22nF 20% 50V
2401	5322 122 32658	22pF 5% 50V
2402	5322 122 32531	100pF 5% 50V
2403	5322 122 32531	100pF 5% 50V
2404	5322 122 32531	100pF 5% 50V
2420	4822 122 33809	22nF 20% 50V
2421	4822 124 40272	33µF 20% 16V
2422	4822 122 33809	22nF 20% 50V
2423	4822 124 40272	33µF 20% 16V
2424	4822 121 43897	1nF 5% 50V
2425	4822 121 51252	470nF 5% 63V
2426	4822 121 43996	33nF 5% 63V
2427	4822 122 33809	22nF 20% 50V
2428	4822 124 40272	33µF 20% 16V
2429	4822 126 10326	180pF 5% 50V
2430	4822 126 10326	180pF 5% 50V
2431	5322 122 32531	100pF 5% 50V
2432	4822 124 40435	10µF 20% 50V
2433	4822 122 33496	100nF 10% 63V
2434	4822 122 33496	100nF 10% 63V
2435	4822 122 33496	100nF 10% 63V
2436	4822 122 33496	100nF 10% 63V
2452	4822 124 41527	47µF 25V
2453	4822 122 33809	22nF 20% 50V
2454	4822 122 33809	22nF 20% 50V
2455	4822 124 40433	47µF 20% 25V
2457	5322 122 32531	100pF 5% 50V
2458	4822 124 41576	2,2µF 20% 50V
2459	4822 122 33809	22nF 20% 50V
2460	4822 122 33809	22nF 20% 50V
2461	4822 122 33809	22nF 20% 50V
2462	4822 124 40272	33µF 20% 16V
2480	4822 122 33809	22nF 20% 50V
2481	4822 124 40272	33µF 20% 16V
2482	4822 124 40272	33µF 20% 16V
2483	5322 122 32658	22pF 5% 50V
2484	5322 122 32658	22pF 5% 50V
2485	4822 122 33809	22nF 20% 50V
2486	4822 124 40272	33µF 20% 16V
2487	4822 122 33809	22nF 20% 50V
2488	4822 122 33809	22nF 20% 50V
2489	4822 122 33809	22nF 20% 50V
2490	4822 122 33809	22nF 20% 50V
2491	4822 122 33809	22nF 20% 50V
2492	4822 122 33809	22nF 20% 50V
2493	4822 122 33809	22nF 20% 50V
2494	4822 122 33809	22nF 20% 50V
2495	4822 122 33809	22nF 20% 50V
2498	5322 122 31866	6,8nF 10% 63V
2499	5322 122 31866	6,8nF 10% 63V
2500	5322 122 31866	6,8nF 10% 63V
2501	5322 122 32838	82nF 10% 63V
2502	4822 122 33543	15nF 10% 50V
2503	4822 122 33543	15nF 10% 50V
2504	4822 122 33809	22nF 20% 50V
2505	4822 122 33809	22nF 20% 50V
2540	5322 122 32531	100pF 5% 50V
2750	5322 122 32448	10pF 5% 50V
2751	5322 122 32448	10pF 5% 50V
2752	4822 124 41576	2,2µF 20% 50V
2753	4822 124 41576	2,2µF 20% 50V
2754	4822 124 41577	4,7µF 20% 50V
2755	4822 124 41577	4,7µF 20% 50V
2756	5322 122 32448	10pF 5% 50V
2757	5322 122 32448	10pF 5% 50V
2758	4822 122 33809	22nF 20% 50V
2759	4822 122 33809	22nF 20% 50V
2760	4822 122 33809	22nF 20% 50V
2761	4822 122 33809	22nF 20% 50V
2762	4822 124 40272	33µF 20% 16V
2763	4822 124 40272	33µF 20% 16V
2764	4822 124 40272	33µF 20% 16V
2765	4822 124 40272	33µF 20% 16V
2766	5322 116 80853	560pF 5% 63V
2767	5322 116 80853	560pF 5% 63V
2768	5322 116 80853	560pF 5% 63V
2769	5322 116 80853	560pF 5% 63V
2770	4822 122 32139	12pF 5% 63V
2771	4822 122 32139	12pF 5% 63V

3029	4822 050 22203	22k 1% 0,6W
3300	4822 051 20104	100k 5% 0,1W
3301	4822 051 20104	100k 5% 0,1W
3302	4822 051 20104	100k 5% 0,1W
3303	4822 051 20104	100k 5% 0,1W
3304	4822 050 21002	1k 1% 0,6W
3305	4822 050 21002	1k 1% 0,6W
3306	4822 050 21002	1k 1% 0,6W
3307	4822 050 21002	1k 1% 0,6W
3308	4822 052 10339	33Ω 5% 0,33W
3309	4822 052 10339	33Ω 5% 0,33W
3340	4822 052 10478	4Ω7 5% 0,33W
3341	4822 052 10478	4Ω7 5% 0,33W
3342	4822 052 10478	4Ω7 5% 0,33W
3343	4822 051 20479	47Ω 5% 0,1W
3344	4822 051 20479	47Ω 5% 0,1W
3345	4822 052 10478	4Ω7 5% 0,33W
3346	4822 051 20223	22k 5% 0,1W
3347	4822 051 20223	22k 5% 0,1W
3348	4822 051 20472	4k7 5% 0,1W
3349	4822 052 10478	4Ω7 5% 0,33W
3350	4822 052 10478	4Ω7 5% 0,33W
3351	4822 051 20479	47Ω 5% 0,1W
3352	4822 051 20479	47Ω 5% 0,1W
3354	4822 052 10478	4Ω7 5% 0,33W
3370	4822 052 10478	4Ω7 5% 0,33W
3371	4822 052 10478	4Ω7 5% 0,33W
3372	4822 050 21003	10k 1% 0,6W
3373	4822 050 21003	10k 1% 0,6W
3374	4822 050 21003	10k 1% 0,6W
3377	4822 052 10478	4Ω7 5% 0,33W
3378	4822 052 10108	1Ω 5% 0,33W
3379	4822 051 20391	390Ω 5% 0,1W
3380	4822 051 20121	120Ω 5% 0,1W
3381	4822 050 21003	10k 1% 0,6W
3382	4822 051 20274	270k 5% 0,1W
3383	4822 051 20274	270k 5% 0,1W
3385	4822 051 20101	100Ω 5% 0,1W
3386	4822 051 20101	100Ω 5% 0,1W
3387	4822 052 10478	4Ω7 5% 0,33W
3400	4822 052 10478	4Ω7 5% 0,33W
3401	4822 051 20101	100Ω 5% 0,1W
3402	4822 051 20101	100Ω 5% 0,1W
3403	4822 051 20101	100Ω 5% 0,1W
3404	4822 051 20101	100Ω 5% 0,1W
3420	4822 052 10478	4Ω7 5% 0,33W
3421	4822 051 20103	10k 5% 0,1W
3422	4822 052 10478	4Ω7 5% 0,33W
3423	4822 050 23001	300Ω 1% 0,6W
3424	4822 051 20103	10k 5% 0,1W
3425	4822 051 20104	100k 5% 0,1W
3426	4822 051 20104	100k 5% 0,1W
3427	4822 051 20331	330Ω 5% 0,1W
3428	4822 051 20274	270k 5% 0,1W
3429	4822 051 20152	1k5 5% 0,1W
3430	4822 051 20682	6k8 5% 0,1W
3431	4822 051 20272	2k7 5% 0,1W
3432	4822 051 20682	6k8 5% 0,1W
3433	4822 051 20479	47Ω 5% 0,1W
3434	4822 051 20273	47k 5% 0,1W
3435	4822 051 20103	10k 5% 0,1W
3436	4822 051 20759	75Ω 5% 0,1W
3437	4822 050 21002	1k 1% 0,6W
3438	4822 051 20105	1M 5% 0,1W
3439	4822 051 20223	22k 5% 0,1W

3440	4822 051 20473	47k 5% 0,1W
3441	4822 051 20103	10k 5% 0,1W
3442	4822 051 20223	22k 5% 0,1W
3443	4822 052 10478	4Ω7 5% 0,33W
3444	4822 051 20223	22k 5% 0,1W
3445	4822 051 20223	22k 5% 0,1W
3446	4822 051 20473	47k 5% 0,1W
3447	4822 051 20473	47k 5% 0,1W
3448	4822 051 20103	10k 5% 0,1W
3449	4822 051 20101	100Ω 5% 0,1W
3450	4822 050 22403	24k 1% 0,6W
3451	4822 050 24302	4k3 1% 0,6W
3452	4822 050 21304	130k 1% 0,6W
3453	4822 052 10339	33Ω 5% 0,33W
3454	4822 052 10339	33Ω 5% 0,33W
3455	4822 050 22403	24k 1% 0,6W
3456	4822 050 24302	4k3 1% 0,6W
3457	4822 050 21304	130k 1% 0,6W
3458	4822 050 21002	1k 1% 0,6W
3459	4822 051 20822	8k2 5% 0,1W
3460	4822 051 20105	1M 5% 0,1W
3461	4822 051 20222	2k2 5% 0,1W
3462	4822 052 10108	1Ω 5% 0,33W
3463	4822 051 20222	2k2 5% 0,1W
3464	4822 051 20103	10k 5% 0,1W
3480	4822 052 10108	1Ω 5% 0,33W
3481	4822 051 20824	820k 5% 0,1W
3482	4822 051 20103	10k 5% 0,1W
3484	4822 050 21002	1k 1% 0,6W
3485	4822 051 20223	22k 5% 0,1W
3486	4822 050 22203	22k 1% 0,6W
3487	4822 050 22203	22k 1% 0,6W
3488	4822 050 22203	22k 1% 0,6W
3489	4822 052 10478	4Ω7 5% 0,33W
3490	4822 051 20223	22k 5% 0,1W
3491	4822 051 20101	100Ω 5% 0,1W
3492	4822 051 20101	100Ω 5% 0,1W
3493	4822 051 10102	1k 2% 0,25W
3494	4822 051 10101	100Ω 2% 0,25W
3495	4822 050 22203	22k 1% 0,6W
3496	4822 050 21002	1k 1% 0,6W
3497	4822 050 22203	22k 1% 0,6W
3498	4822 051 10102	1k 2% 0,25W
3499	4822 051 20223	22k 5% 0,1W
3500	4822 051 20223	22k 5% 0,1W
3501	4822 050 22203	22k 1% 0,6W
3502	4822 050 22203	22k 1% 0,6W
3503	4822 050 21002	1k 1% 0,6W
3504	4822 051 20103	10k 5% 0,1W
3505	4822 051 20223	22k 5% 0,1W
3508	4822 050 22203	22k 1% 0,6W
3509	4822 050 22203	22k 1% 0,6W
3510	4822 050 22203	22k 1% 0,6W
3511	4822 050 22203	22k 1% 0,6W
3512	4822 050 22203	22k 1% 0,6W
3513	4822 050 21002	1k 1% 0,6W
3514	4822 050 21002	1k 1% 0,6W
3515	4822 050 21002	1k 1% 0,6W
3516	4822 051 20472	4k7 5% 0,1W
3517	4822 051 20153	15k 5% 0,1W
3518	4822 051 20272	2k7 5% 0,1W
3519	4822 051 20473	47k 5% 0,1W
3520	4822 050 21002	1k 1% 0,6W
3521	4822 051 10102	1k 2% 0,25W
3522	4822 050 23483	34k8 1% 0,6W

3523	4822 050 23483	34k8 1% 0,6W
3524	4822 050 21783	17k8 1% 0,6W
3525	4822 050 28662	8k66 1% 0,6W
3526	4822 050 21003	10k 1% 0,6W
3527	4822 050 21003	10k 1% 0,6W
3528	4822 050 21002	1k 1% 0,6W
3529	4822 050 21003	10k 1% 0,6W
3530	4822 050 21002	1k 1% 0,6W
3531	4822 050 21003	10k 1% 0,6W
3532	4822 050 21002	1k 1% 0,6W
3533	4822 050 21003	10k 1% 0,6W
3534	4822 050 21002	1k 1% 0,6W
3535	4822 050 21003	10k 1% 0,6W
3536	4822 051 20103	10k 5% 0,1W
3537	4822 051 20103	10k 5% 0,1W
3538	4822 051 20824	820k 5% 0,1W
3539	4822 051 20103	10k 5% 0,1W
3540	4822 051 20223	22k 5% 0,1W
3541	4822 051 20473	47k 5% 0,1W
3542	4822 051 20183	18k 5% 0,1W
3543	4822 051 20103	10k 5% 0,1W
3544	4822 051 20103	10k 5% 0,1W
3545	4822 051 20391	390Ω 5% 0,1W
3550	4822 051 10101	100Ω 2% 0,25W
3551	4822 051 10101	100Ω 2% 0,25W
3552	4822 052 10478	4Ω7 5% 0,33W
3553	4822 051 20103	10k 5% 0,1W
3554	4822 050 22203	22k 1% 0,6W
3555	4822 050 22203	22k 1% 0,6W
3556	4822 050 22203	22k 1% 0,6W
3557	4822 050 22203	22k 1% 0,6W
3750	4822 050 21004	100k 1% 0,6W
3751	4822 050 21004	100k 1% 0,6W
3752	4822 050 21004	100k 1% 0,6W
3753	4822 050 21004	100k 1% 0,6W
3754	4822 050 21004	100k 1% 0,6W
3755	4822 050 21004	100k 1% 0,6W
3756	4822 050 22004	100k 1% 0,6W
3757	4822 050 22004	100k 1% 0,6W
3758	4822 050 22004	100k 1% 0,6W
3759	4822 050 22004	100k 1% 0,6W
3760	4822 051 20103	10k 5% 0,1W
3761	4822 051 20103	10k 5% 0,1W
3762	4822 051 20394	390k 5% 0,1W
3763	4822 051 20394	390k 5% 0,1W
3764	4822 051 20472	4k7 5% 0,1W
3765	4822 051 20472	4k7 5% 0,1W
3766	4822 051 20472	4k7 5% 0,1W
3767	4822 051 20472	4k7 5% 0,1W
3768	4822 051 20183	18k 5% 0,1W
3769	4822 051 20183	18k 5% 0,1W
3770	4822 051 20183	18k 5% 0,1W
3771	4822 051 20183	18k 5% 0,1W
3772	4822 052 10339	33Ω 5% 0,33W
3773	4822 052 10339	33Ω 5% 0,33W
3774	4822 052 10339	33Ω 5% 0,33W
3775	4822 052 10339	33Ω 5% 0,33W
4400	4822 051 10008	Chip jumper
4401	4822 051 10008	Chip jumper
4481	4822 051 10008	Chip jumper
4482	4822 051 10008	Chip jumper
4484	4822 051 10008	Chip jumper

5340	4822 157 51235	COIL 4,7µH 10%

6420	4822 130 30862	BZX79-C9V1
6482	4822 130 31983	BAT85
6483	4822 130 31983	BAT85
6540	4822 130 30621	1N4148
6541	4822 130 30621	1N4148
6750	4822 130 30621	1N4148
6751	4822 130 30621	1N4148
6752	4822 130 30621	1N4148
6753	4822 130 30621	1N4148
6754	4822 130 30621	1N4148
6755	4822 130 30621	1N4148
6756	4822 130 30621	1N4148
6757	4822 130 30621	1N4148
6758	4822 130 30621	1N4148
6759	4822 130 30621	1N4148
6760	4822 130 34174	BZX79-C4V7
6761	4822 130 34174	BZX79-C4V7
7300	5322 209 86234	NE5532N
7340	4822 209 30728	AK5326
7341	4822 209 30736	MC74HC163D
7342	4822 209 30736	MC74HC163D
7343	4822 209 30739	MC74HC04AD
7344	4822 209 30721	MC74HC74AD
7345	4822 130 42696	BC818-25
7346	4822 130 61207	BC848
7347	5322 209 11222	MC7905CT
7370	4822 209 30716	CDCE
7371	4822 209 63925	FCB61C65L-70T
7372	4822 209 30726	MC74HC4046AD
7373	4822 209 83163	LM833N
7374	4822 209 30735	MC74HC175D
7375	4822 209 30719	MC74HC00AD
7400	4822 209 30703	MC74HC157AD
7420	4822 209 30718	M51581FP
7421	4822 130 31129	BB212
7422	5322 209 82941	LM358D
7423	4822 130 61207	BC848
7424	5322 130 42012	BC858
7425	4822 209 30734	MC74HC4053N
7426	4822 130 61207	BC848
7427	4822 130 61207	BC848
7450	4822 209 30717	WPC
7451	4822 209 30732	LM319D
7452	4822 209 83163	LM833N
7480	4822 209 30715	MC68HC11F1
7481	4822 209 30729	AM27C512-150PC
7482	4822 209 30727	X28C64P-20
7483	4822 209 30722	MC74HC139AD
7484	4822 209 30719	MC74HC00AD
7485	4822 209 30741	SAD1009T/03
7486	4822 209 30724	MC74HC374ADW
7487	4822 209 30724	MC74HC374ADW
7488	4822 209 30723	MC74HC373ADW
7490	5322 130 42012	BC858
7491	4822 209 70941	MC34084P
7492	5322 209 81331	MC7805ACT
7542	4822 130 44197	BC558B
7543	4822 130 61207	BC848
7750	4822 209 70941	MC34084P
7751	4822 209 83163	LM833N
7752	4822 130 61207	BC848
7753	4822 130 61207	BC848
7754	4822 130 61207	BC848
7755	4822 130 61207	BC848

DECODER PANEL

Miscellaneous

1140	4822 276 12339	SWITCH,PUSHBUT.
1170	4822 218 21019	REMOTE CONTROL PLT102

HF transformer

1180	4822 148 80281	HF TRANSFORMER

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2090	4822 122 33175	2,2nF 20% 50V
2091	4822 124 40272	33µF 20% 16V
2092	4822 122 33809	22nF 20% 50V
2093	4822 121 51252	470nF 5% 63V
2094	4822 124 41576	2,2µF 20% 50V
2095	4822 124 40272	33µF 20% 16V
2096	4822 122 33809	22nF 20% 50V
2097	5322 122 32452	47pF 5% 50V
2098	4822 122 33809	22nF 20% 50V
2099	5322 122 32531	100pF 5% 50V
2140	4822 122 33809	22nF 20% 50V
2141	5322 122 32659	33pF 5% 50V
2142	5322 122 32659	33pF 5% 50V
2160	4822 122 33172	390pF 5% 50V
2161	4822 122 33172	390pF 5% 50V
2162	4822 122 33172	390pF 5% 50V
2163	4822 122 33172	390pF 5% 50V
2170	4822 122 33809	22nF 20% 50V
2171	4822 124 40272	33µF 20% 16V
2180	4822 122 33105	56nF 10% 63V
2181	4822 122 33105	56nF 10% 63V
2182	4822 122 33496	100nF 10% 63V
2190	4822 124 40272	33µF 20% 16V
2191	4822 122 33496	100nF 10% 63V
2192	5322 122 32659	33pF 5% 50V
2196	5322 122 32659	33pF 5% 50V
2230	4822 122 10166	22nF 30% 16V
2231	5322 122 32531	100pF 5% 50V
2232	5322 122 32531	100pF 5% 50V
2250	4822 122 33809	22nF 20% 50V
2260	4822 122 33809	22nF 20% 50V
2261	4822 122 33809	22nF 20% 50V
2262	4822 122 33809	22nF 20% 50V
2263	4822 122 33809	22nF 20% 50V
2264	4822 124 41525	100µF 20% 25V
2265	4822 124 41525	100µF 20% 25V
2266	4822 124 41525	100µF 20% 25V
2267	4822 124 41525	100µF 20% 25V
2268	4822 124 22339	100µF 20% 16V Bipolar
2269	4822 124 22339	100µF 20% 16V Bipolar
2280	4822 122 10166	22nF 30% 16V

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3090	4822 051 20222	2k2 5% 0,1W
3091	4822 051 20223	22k 5% 0,1W
3092	4822 051 20223	22k 5% 0,1W
3093	4822 051 20223	22k 5% 0,1W
3094	4822 052 10108	1Ω 5% 0,33W
3095	4822 051 20103	10k 5% 0,1W
3097	4822 051 20759	75Ω 5% 0,1W
3098	4822 051 20392	3k9 5% 0,1W
3099	4822 051 20912	9k1 5% 0,1W
3100	4822 051 20162	1k6 5% 0,1W
3101	4822 052 10478	4Ω7 5% 0,33W
3102	4822 051 20223	22k 5% 0,1W
3103	4822 051 20223	22k 5% 0,1W
3104	4822 051 20223	22k 5% 0,1W
3105	4822 051 20223	22k 5% 0,1W
3106	4822 051 10102	1k 2% 0,25W
3108	4822 051 20101	100Ω 5% 0,1W
3129	4822 051 20223	22k 5% 0,1W
3130	4822 051 20223	22k 5% 0,1W
3140	4822 052 10478	4Ω7 5% 0,33W
3141	4822 051 20223	22k 5% 0,1W
3142	4822 051 20472	4k7 5% 0,1W
3143	4822 051 20101	100Ω 5% 0,1W
3144	4822 051 20101	100Ω 5% 0,1W
3159	4822 051 20563	56k 5% 0,1W
3160	4822 051 20101	100Ω 5% 0,1W
3161	4822 051 20101	100Ω 5% 0,1W
3162	4822 051 20101	100Ω 5% 0,1W
3163	4822 051 20101	100Ω 5% 0,1W
3164	4822 051 20122	1k2 5% 0,1W
3165	4822 051 20122	1k2 5% 0,1W
3166	4822 051 20122	1k2 5% 0,1W
3167	4822 051 20122	1k2 5% 0,1W
3168	4822 051 20101	100Ω 5% 0,1W
3169	4822 051 20272	2k7 5% 0,1W
3170	4822 052 10478	4Ω7 5% 0,33W
3171	4822 051 20822	8k2 5% 0,1W
3180	4822 051 20561	560Ω 5% 0,1W
3181	4822 051 20621	620Ω 5% 0,1W
3190	4822 052 10108	1Ω 5% 0,33W
3191	4822 051 20101	100Ω 5% 0,1W
3195	4822 051 20101	100Ω 5% 0,1W
3196	4822 051 20103	10k 5% 0,1W
3197	4822 051 20223	22k 5% 0,1W
3198	4822 051 20472	4k7 5% 0,1W
3199	4822 051 20103	10k 5% 0,1W
3230	4822 051 10101	100Ω 2% 0,25W
3231	4822 052 10478	4Ω7 5% 0,33W
3232	4822 051 20223	22k 5% 0,1W
3233	4822 051 20223	22k 5% 0,1W
3234	4822 051 20223	22k 5% 0,1W
3235	4822 051 20101	100Ω 5% 0,1W
3236	4822 051 20101	100Ω 5% 0,1W
3237	4822 051 20223	22k 5% 0,1W
3250	4822 052 10478	4Ω7 5% 0,33W
3251	4822 051 10102	1k 2% 0,25W
3260	4822 050 21203	12k 1% 0,6W
3261	4822 050 21203	12k 1% 0,6W
3262	4822 050 21003	12k 1% 0,6W
3263	4822 050 21003	12k 1% 0,6W
3272	4822 052 10339	33Ω 5% 0,33W
3273	4822 052 10339	33Ω 5% 0,33W
3274	4822 052 10339	33Ω 5% 0,33W
3275	4822 052 10339	33Ω 5% 0,33W
3276	4822 051 20103	10k 5% 0,1W
3277	4822 051 20103	10k 5% 0,1W
3280	4822 051 20223	22k 5% 0,1W
3281	4822 052 10478	4Ω7 5% 0,33W
3282	4822 051 20223	22k 5% 0,1W
3801	4822 051 10008	Chip jumper
3802	4822 051 10008	Chip jumper
3803	4822 051 10008	Chip jumper
3804	4822 051 10008	Chip jumper
3805	4822 051 10008	Chip jumper
3806	4822 051 10008	Chip jumper
3807	4822 051 10008	Chip jumper
3808	4822 051 10008	Chip jumper
3809	4822 051 10008	Chip jumper
3810	4822 051 10008	Chip jumper
3812	4822 051 10008	Chip jumper

3813	4822 051 10008	Chip jumper
3814	4822 051 10008	Chip jumper
3815	4822 051 10008	Chip jumper
3816	4822 051 10008	Chip jumper
3817	4822 051 10008	Chip jumper
3818	4822 051 10008	Chip jumper
3819	4822 051 10008	Chip jumper
3820	4822 051 10008	Chip jumper
3821	4822 051 10008	Chip jumper
3822	4822 051 10008	Chip jumper
3823	4822 051 10008	Chip jumper
3825	4822 051 10008	Chip jumper
3828	4822 051 10008	Chip jumper
3845	4822 051 10008	Chip jumper
4160	4822 051 10008	Chip jumper
4190	4822 051 10008	Chip jumper
4191	4822 051 10008	Chip jumper
4192	4822 051 10008	Chip jumper
4193	4822 051 10008	Chip jumper
4230	4822 051 10008	Chip jumper
4260	4822 051 10008	Chip jumper
4261	4822 051 10008	Chip jumper
4262	4822 051 10008	Chip jumper
4263	4822 051 10008	Chip jumper
4264	4822 051 10008	Chip jumper

5160	4822 157 60363	COIL

6141	4822 130 42696	BC818-25
6160	4822 130 31981	BZX79-C3V9
6161	4822 130 30621	1N4148
6162	4822 130 30621	1N4148
7090	4822 209 61759	SAA7310GP/H5
7091	4822 209 70422	MN4264-15
7092	4822 130 42131	BF550
7140	4822 209 30719	MC74HC00AD
7160	4822 130 42696	BC818-25
7161	4822 130 42696	BC818-25
7162	4822 130 42696	BC818-25
7163	4822 130 42696	BC818-25
7164	5322 130 42012	BC858
7190	4822 209 72545	SAA7220P/B
7191	4822 130 61207	BC848
7192	4822 130 42696	BC818-25
7230	4822 209 30703	MC74HC157AD
7250	4822 209 30721	MC74HC74AD
7260	5322 209 86234	NE5532N
7261	5322 209 86234	NE5532N
7280	4822 209 30719	MC74HC00AD

LEVEL AND BALANCE PANEL

2556	4822 124 22339	100µF 20% 16V Bipolar
2557	4822 124 22339	100µF 20% 16V Bipolar
2558	4822 124 22339	100µF 20% 16V Bipolar
2559	4822 124 22339	100µF 20% 16V Bipolar
2560	4822 124 40433	47µF 20% 25V
2561	4822 124 40433	47µF 20% 25V
2562	4822 122 10166	22nF 30% 16V
2563	4822 122 10166	22nF 30% 16V
2564	4822 122 10166	22nF 30% 16V
2565	4822 122 10166	22nF 30% 16V
2566	4822 124 40433	47µF 20% 25V
2567	4822 124 40433	47µF 20% 25V

3550	4822 102 50056	3x10k 20% Potm LEVEL
3551		2x10k Potm BALANCE
3552	4822 050 22003	20k 1% 0,6W
3553	4822 050 22003	20k 1% 0,6W
3554	4822 050 28202	8k2 1% 0,6W
3555	4822 050 28202	8k2 1% 0,6W
3556	4822 050 24701	470Ω 1% 0,6W
3557	4822 050 24701	470Ω 1% 0,6W
3558	4822 050 24701	470Ω 1% 0,6W
3559	4822 050 24701	470Ω 1% 0,6W

6550	4822 130 34167	BZX79-C6V2
6551	4822 130 34167	BZX79-C6V2
6552	4822 130 34167	BZX79-C6V2
6553	4822 130 34167	BZX79-C6V2
7550	5322 209 86234	NE5532N
7551	5322 209 86234	NE5532N

Miscellaneous

	4822 256 91832	FTD HOLDER
	4822 255 41241	LED SOCKET
	4822 255 41241	LED SOCKET
	4822 255 41239	LED SOCKET
1802	4822 214 51772	RECEIVER GP1U521X
1804	4822 242 73654	RESONATOR
1805	4822 130 91052	DISPLAY BG-982Gk
1810	4822 276 13112	SWITCH,PUSHBUT.
1811	4822 276 13112	SWITCH,PUSHBUT.
1812	4822 276 13112	SWITCH,PUSHBUT.
1813	4822 276 13112	SWITCH,PUSHBUT.
1814	4822 276 13112	SWITCH,PUSHBUT.
1815	4822 276 13112	SWITCH,PUSHBUT.
1816	4822 276 13112	SWITCH,PUSHBUT.
1817	4822 276 13112	SWITCH,PUSHBUT.
1818	4822 276 13112	SWITCH,PUSHBUT.
1819	4822 276 13112	SWITCH,PUSHBUT.
1820	4822 276 13112	SWITCH,PUSHBUT.
1821	4822 276 13112	SWITCH,PUSHBUT.
1822	4822 276 13112	SWITCH,PUSHBUT.
1823	4822 276 13112	SWITCH,PUSHBUT.
1824	4822 276 13112	SWITCH,PUSHBUT.
1825	4822 276 13112	SWITCH,PUSHBUT.
1826	4822 276 13112	SWITCH,PUSHBUT.
1827	4822 276 13112	SWITCH,PUSHBUT.
1828	4822 276 13112	SWITCH,PUSHBUT.
1829	4822 276 13104	SWITCH,PUSHBUT.
1830	4822 276 13112	SWITCH,PUSHBUT.
1831	4822 276 13112	SWITCH,PUSHBUT.
1832	4822 276 13112	SWITCH,PUSHBUT.
1833	4822 276 13112	SWITCH,PUSHBUT.
1834	4822 276 13112	SWITCH,PUSHBUT.
1835	4822 276 13112	SWITCH,PUSHBUT.
1836	4822 276 13112	SWITCH,PUSHBUT.
1837	4822 276 13112	SWITCH,PUSHBUT.
1838	4822 276 13104	SWITCH,PUSHBUT.
1839	4822 276 13104	SWITCH,PUSHBUT.
1840	4822 276 13112	SWITCH,PUSHBUT.
1841	4822 276 13112	SWITCH,PUSHBUT.
1842	4822 276 13112	SWITCH,PUSHBUT.
1843	4822 276 13112	SWITCH,PUSHBUT.
1844	4822 276 13112	SWITCH,PUSHBUT.
1845	4822 276 13112	SWITCH,PUSHBUT.
1846	4822 276 13112	SWITCH,PUSHBUT.

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2805	4822 122 10166	22nF 30% 16V
2806	4822 124 22031	4µ7 20% 63V

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3800	4822 050 22203	22k 1% 0,6W
3801	4822 051 10101	100Ω 2% 0,25W
3802	4822 050 22203	22k 1% 0,6W
3803	4822 050 22203	22k 1% 0,6W
3804	4822 050 22203	22k 1% 0,6W
3805	4822 050 22203	22k 1% 0,6W
3806	4822 116 52217	270Ω 5% 0,5W
3807	4822 116 52217	270Ω 5% 0,5W
3808	4822 116 52217	270Ω 5% 0,5W
3809	4822 116 52217	270Ω 5% 0,5W
3810	4822 050 21002	1k 1% 0,6W
3811	4822 051 10101	100Ω 2% 0,25W
3812	4822 051 10101	100Ω 2% 0,25W
3816	5322 111 90473	10k 2% Res.Network
3817	5322 111 90473	10k 2% Res.Network
3818	4822 050 21002	1k 1% 0,6W
3820	4822 050 22204	220k 1% 0,6W
3821	4822 050 22203	22k 1% 0,6W
3822	4822 050 22203	22k 1% 0,6W
3823	4822 050 21002	1k 1% 0,6W
3824	4822 050 22203	22k 1% 0,6W
3825	4822 050 22203	22k 1% 0,6W
3826	4822 050 22203	22k 1% 0,6W

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6800	4822 130 30621	1N4148
6801	4822 130 30621	1N4148
6802	4822 130 30621	1N4148
6803	4822 130 30621	1N4148
6804	4822 130 30621	1N4148
6805	4822 130 30621	1N4148
6806	4822 130 30621	1N4148
6807	4822 130 30621	1N4148
6808	4822 130 30621	1N4148
6809	4822 130 30621	1N4148
6810	4822 130 80849	TLHR4499
6811	4822 130 80849	TLHR4499
6812	4822 130 80849	TLHR4499
6813	4822 130 80849	TLHR4499
6102	4822 130 80848	TLGH4999
6501	4822 130 80848	TLGH4999
6816	4822 130 80849	TLHR4499
6817	4822 130 80849	TLHR4499
7800	4822 209 61191	TMP47C670N/1364
7801	4822 130 40938	BC548
7802	4822 130 40938	BC548
7803	4822 130 44197	BC558B
7804	4822 130 40938	BC548
7805	4822 209 60886	UDN-2580A
7806	4822 209 60886	UDN-2580A

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2001	4822 124 42355	10µF 20% 50V
2002	4822 124 42355	10µF 20% 50V
2003	4822 121 51093	6,8nF 10% 63V
2004	4822 121 51093	6,8nF 10% 63V
2005	4822 126 10324	33pF 63V
2006	4822 126 10324	33pF 63V
2007	5322 121 42386	100nF 5% 50V
2008	5322 121 42386	100nF 5% 50V
2009	5322 121 42386	100nF 5% 50V
2010	5322 121 42386	100nF 5% 50V
2011	5322 121 42386	100nF 5% 50V
2012	5322 121 42386	100nF 5% 50V
2013	4822 124 42355	10µF 20% 50V
2014	4822 124 42355	10µF 20% 50V
2015	4822 124 42355	10µF 20% 50V
2016	4822 124 42355	10µF 20% 50V
2201	4822 124 42354	100µF 20% 16
2202	4822 124 42354	100µF 20% 16
2203	4822 124 42354	100µF 20% 16
2204	4822 124 42354	100µF 20% 16
2205	4822 122 32083	8,2pF 5% 63V
2206	4822 122 32083	8,2pF 5% 63V
2207	4822 122 32083	8,2pF 5% 63V
2208	4822 122 32083	8,2pF 5% 63V
2209	4822 122 31765	100pF 5% 63V
2210	4822 122 31765	100pF 5% 63V
2211	4822 122 31765	100pF 5% 63V
2212	4822 122 31765	100pF 5% 63V
2213	4822 124 42354	100µF 20% 16
2214	4822 124 42354	100µF 20% 16
2331	4822 124 42355	10µF 20% 50V
2332	4822 124 42355	10µF 20% 50V
2333	4822 124 42355	10µF 20% 50V
2334	4822 124 42355	10µF 20% 50V
2335	4822 122 31746	1nF 5% 63V
2336	4822 122 31746	1nF 5% 63V
2337	4822 124 42354	100µF 20% 16
2338	4822 124 42354	100µF 20% 16
2339	4822 121 70052	15nF 5% 63V
2340	4822 121 70052	15nF 5% 63V
2401	4822 124 42355	10µF 20% 50V
2402	4822 124 42355	10µF 20% 50V
2403	4822 124 42355	10µF 20% 50V
2404	4822 124 42355	10µF 20% 50V
2405	4822 124 42355	10µF 20% 50V
2406	4822 124 42355	10µF 20% 50V
2407	4822 124 42355	10µF 20% 50V
2408	4822 124 42355	10µF 20% 50V
2421	4822 124 42355	10µF 20% 50V
2422	4822 124 42355	10µF 20% 50V
2423	4822 124 42355	10µF 20% 50V
2424	4822 124 42355	10µF 20% 50V
2431	4822 124 42355	10µF 20% 50V
2432	4822 124 42355	10µF 20% 50V
2433	4822 124 42355	10µF 20% 50V
2434	4822 124 42355	10µF 20% 50V
2435	4822 124 42355	10µF 20% 50V
2436	4822 124 42355	10µF 20% 50V
2437	4822 124 42355	10µF 20% 50V
2438	4822 124 42355	10µF 20% 50V
2440	4822 124 42355	10µF 20% 50V
2441	4822 124 42355	10µF 20% 50V
2501	4822 124 42355	10µF 20% 50V

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3001	4822 051 10103	10k 2% 0,25W
3002	4822 051 10103	10k 2% 0,25W
3003	5322 116 80427	1k 1% 0,125W
3004	5322 116 80427	1k 1% 0,125W
3005	4822 051 10109	10Ω 2% 0,25W
3006	4822 051 10109	10Ω 2% 0,25W
3013	4822 051 53302	3k3 1% 0,125W
3014	4822 051 53302	3k3 1% 0,125W
3015	4822 051 55101	510Ω 1% 0,125W
3016	4822 051 55101	510Ω 1% 0,125W
3017	4822 051 51203	12k 1% 0,125W
3018	4822 051 51203	12k 1% 0,125W
3019	4822 051 58203	82k 1% 0,125W
3020	4822 051 58203	82k 1% 0,125W
3021	4822 051 54702	4k7 1% 0,125W
3022	4822 051 54702	4k7 1% 0,125W
3023	4822 051 54703	47k 1% 0,125W
3024	4822 051 54703	47k 1% 0,125W
3027	4822 051 54701	470Ω 1% 0,125W
3028	4822 051 54701	470Ω 1% 0,125W
3033	4822 051 51802	1k8 1% 0,125W
3034	4822 051 51802	1k8 1% 0,125W
3035	4822 051 54703	47k 1% 0,125W
3036	4822 051 54703	47k 1% 0,125W
3037	4822 051 10829	82Ω 2% 0,25W
3201	4822 051 56803	68k 1% 0,125W
3202	4822 051 56803	68k 1% 0,125W
3203	4822 051 54703	47k 1% 0,125W
3204	4822 051 54703	47k 1% 0,125W
3205	4822 051 54703	47k 1% 0,125W
3206	4822 051 54703	47k 1% 0,125W
3207	4822 051 51503	15k 1% 0,125W
3208	4822 051 51503	15k 1% 0,125W
3209	4822 051 51503	15k 1% 0,125W
3210	4822 051 51503	15k 1% 0,125W
3211	4822 051 54702	4k7 1% 0,125W
3212	4822 051 54702	4k7 1% 0,125W
3213	4822 051 54702	4k7 1% 0,125W
3214	4822 051 54702	4k7 1% 0,125W
3215	4822 051 54702	4k7 1% 0,125W
3216	4822 051 54702	4k7 1% 0,125W
3217	4822 051 54702	4k7 1% 0,125W
3218	4822 051 54702	4k7 1% 0,125W
3219	4822 051 54703	47k 1% 0,125W
3220	4822 051 54703	47k 1% 0,125W
3331	4822 051 55602	5k6 1% 0,125W
3332	4822 051 55602	5k6 1% 0,125W
3333	4822 051 55602	5k6 1% 0,125W
3334	4822 051 55602	5k6 1% 0,125W
3335	5322 116 80427	1k 1% 0,125W
3336	5322 116 80427	1k 1% 0,125W
3337	5322 116 80445	4k7 1% 0,125W
3338	5322 116 80445	4k7 1% 0,125W
3339	4822 051 55602	5k6 1% 0,125W
3340	4822 051 55602	5k6 1% 0,125W
3341	4822 051 56803	68k 1% 0,125W
3342	4822 051 56803	68k 1% 0,125W
3343	4822 051 51503	15k 1% 0,125W
3344	4822 051 51503	15k 1% 0,125W
3345	5322 116 80445	4k7 1% 0,125W
3346	5322 116 80445	4k7 1% 0,125W
3347	4822 100 10875	2K2 20% Trimpot
3348	4822 100 10875	2K2 20% Trimpot
3349	4822 051 55101	510Ω 1% 0,125W
3350	4822 051 55101	510Ω 1% 0,125W

3351	4822 051 55101	510Ω 1% 0,125W
3352	4822 051 55101	510Ω 1% 0,125W
3401	4822 116 81207	47Ω 1% 0,4W
3402	4822 116 81207	47Ω 1% 0,4W
3403	4822 116 81207	47Ω 1% 0,4W
3404	4822 116 81207	47Ω 1% 0,4W
3405	4822 116 81207	47Ω 1% 0,4W
3406	4822 116 81207	47Ω 1% 0,4W
3407	4822 116 81207	47Ω 1% 0,4W
3408	4822 116 81207	47Ω 1% 0,4W
3409	4822 116 81207	47Ω 1% 0,4W
3422	4822 116 81207	47Ω 1% 0,4W
3423	4822 116 81207	47Ω 1% 0,4W
3424	4822 116 81207	47Ω 1% 0,4W
3431	4822 116 81207	47Ω 1% 0,4W
3432	4822 116 81207	47Ω 1% 0,4W
3433	4822 116 81207	47Ω 1% 0,4W
3434	4822 116 81207	47Ω 1% 0,4W
3435	4822 116 81207	47Ω 1% 0,4W
3436	4822 116 81207	47Ω 1% 0,4W
3437	4822 116 81207	47Ω 1% 0,4W
3438	4822 116 81207	47Ω 1% 0,4W
3501	5322 116 80426	100Ω 1% 0,125W
3502	4822 116 81198	15k 1% 0,125W
3503	5322 116 80429	100k 1% 0,125W
3504	4822 051 10274	270k 2% 0,25W
3505	5322 116 80446	47k 1% 0,125W
3506	5322 116 80438	330Ω 1% 0,125W

5000	4822 280 20495	REEDRELAIS LM44E
5001	4822 280 20495	REEDRELAIS LM44E
5301	4822 148 81219	TRANSFORMER TO 1351 4010
5302	4822 148 81219	TRANSFORMER TO 1351 4010
5501	4822 280 20495	REEDRELAIS LM44E

6005	4822 130 30621	1N4148
6006	4822 130 30621	1N4148
6501	4822 130 30621	1N4148
6502	4822 130 30621	1N4148
6503	4822 130 30621	1N4148
7005	4822 209 63706	LM833M
7006	4822 209 63706	LM833M
7009	4822 209 63706	LM833M
7010	4822 209 63706	LM833M
7201	4822 209 63706	LM833M
7202	4822 209 63706	LM833M
7331	4822 209 30803	NE5532 SO
7332	4822 209 30803	NE5532 SO
7501	4822 209 81397	TL431 CLP

HEADPHONE PANEL

2580	5322 124 21762	100µF 20% 10V
2581	5322 124 21762	100µF 20% 10V
2582	5322 124 21711	100µF 20% 25V
2583	5322 124 21711	100µF 20% 25V

3580	4822 051 10101	100Ω 2% 0,25W
3581	4822 051 10101	100Ω 2% 0,25W
3582	4822 102 10398	10k 20% LOG
3584	4822 050 21203	12k 1% 0,6W
3585	4822 050 21203	12k 1% 0,6W
3586	4822 116 52264	27k 5% 0,5W
3587	4822 116 52264	27k 5% 0,5W
3588	4822 052 10109	10Ω 5% 0,33W
3589	4822 052 10109	10Ω 5% 0,33W
3590	4822 051 10122	1k2 2% 0,25W
3591	4822 051 10122	1k2 2% 0,25W
3592	4822 050 21201	120Ω 1% 0,6W
3593	4822 050 21201	120Ω 1% 0,6W

7580	4822 130 40958	BC338-25
7581	4822 130 40958	BC338-25
7582	4822 209 82362	NJM4556D

Miscellaneous

1502	4822 276 11309	SWITCH,PUSHBUT. SDDL
2000	4822 126 10454	3,3nF 20% 400V
5001	4822 146 31048	TRANSFORMER UNIT

C 1	4822 124 41184	470µF 20% 50V
C 2	5322 124 22614	1000µF 20% 50V
C 3	4822 121 41856	22nF 5% 250V
C 4	4822 124 40207	100µF 20% 25V
C 5	4822 121 41856	22nF 5% 250V
C 6	4822 124 40207	100µF 20% 25V
C 7	4822 121 41856	22nF 5% 250V
C 8	4822 124 40207	100µF 20% 25V
C 9	4822 121 41856	22nF 5% 250V
C 10	4822 124 40207	100µF 20% 25V
C 11	4822 121 41856	22nF 5% 250V
C 12	4822 124 40207	100µF 20% 25V
C 13	4822 121 41856	22nF 5% 250V
C 14	4822 124 40207	100µF 20% 25V
C 15	4822 121 41856	22nF 5% 250V
C 16	4822 124 40207	100µF 20% 25V
C 17	4822 121 41856	22nF 5% 250V
C 18	5322 124 22229	1000µF 20% 35V
C 19	5322 121 42386	100nF 5% 63V
C 20	4822 124 80045	4700µF 20% 50V
C 21	4822 124 80045	4700µF 20% 50V
C 22	4822 124 80045	4700µF 20% 50V
C 23	4822 124 40255	100µF 20% 63V
C 24	4822 121 51252	0,47µF 5% 63V
C 25	4822 124 40244	2,2µF 20% 63V
C 26	5322 122 32818	2,2nF 10% 100V
C 27	5322 121 42489	33nF 5% 250V
C 28	5322 124 22614	1000µF 20% 50V
C 29	4822 122 32121	390pF 2% 100V
C 30	5322 121 42386	100nF 5% 63V
C 31	4822 124 41751	47µF 20% 50V
C 32	4822 124 80045	4700µF 20% 50V
C 33	4822 124 80045	4700µF 20% 50V
C 34	5322 124 22614	1000µF 20% 50V
C 35	4822 121 41856	22nF 5% 250V
C 36	4822 124 40246	4,7µF 20% 63V
C 60	4822 121 41856	22nF 5% 250V
C 61	4822 124 40255	100µF 20% 63V

D 1	4822 130 82272	1N4004
D 2	4822 130 82272	1N4004
D 3	4822 130 82272	1N4004
D 4	4822 130 82272	1N4004
D 5	4822 130 82272	1N4004
D 6	4822 130 82272	1N4004
D 7	4822 130 82272	1N4004
D 8	4822 130 82272	1N4004
D 9	4822 130 82272	1N4004
D 10	4822 130 82272	1N4004
D 11	4822 130 82272	1N4004
D 12	4822 130 82272	1N4004
D 13	4822 130 82272	1N4004
D 14	4822 130 82272	1N4004
D 15	4822 130 82272	1N4004
D 16	4822 130 82272	1N4004
D 17	5322 130 34464	1N4448

D 18	5322 130 32677	1N5822
D 19	5322 130 34464	1N4448
D 20	4822 130 82272	1N4004
D 21	4822 130 82272	1N4004
D 22	4822 130 82272	1N4004
D 23	4822 130 82272	1N4004
D 24	5322 130 34464	1N4448
D 32	5322 130 34464	1N4448
D 33	5322 130 34464	1N4448
D 34	4822 130 82272	1N4004
D 35	4822 130 82272	1N4004
DV 1	4822 130 30682	BZX79B9V1
DV 2	4822 130 31981	BZX79B3V9
DV 3	4822 130 34174	BZX79B4V7
DZ 1	5322 130 50399	B40C3700/2200
DZ 2	5322 130 34962	B40C5000/3300

IC 2	5322 209 81236	LM337KC
IC 3	5322 209 81236	LM337KC
IC 4	4822 209 80591	LM317SP
IC 5	4822 209 80591	LM317SP
IC 6	4822 209 80591	LM317SP
IC 7	5322 209 81236	LM337KC
IC 8	5322 209 81236	LM337KC
IC 9	5322 209 70292	L296
IC10	4822 209 30987	MC34160

L 1	4822 158 10879	TOR. CHOKE 250µH
L 2	4822 158 10878	TOR. CHOKE 72µH

Q 1	4822 130 41096	BC550C
Q 2	4822 130 41096	BC550C
Q 3	4822 130 41096	BC550C
Q 4	4822 130 61755	BC560C
Q 5	4822 130 41096	BC550C
Q 7	4822 130 41096	BC550C

R 4	4822 050 23902	3k9 1% 0,6W
R 5	4822 050 26801	680Ω 1% 0,6W
R 6	4822 050 26802	6k8 1% 0,6W
R 7	4822 050 21502	1k5 1% 0,6W
R 8	4822 050 26802	6k8 1% 0,6W
R 9	4822 050 26801	680Ω 1% 0,6W
R 11	4822 050 22201	220Ω 1% 0,6W
R 12	4822 050 21001	100Ω 1% 0,6W
R 13	4822 050 22201	220Ω 1% 0,6W
R 14	4822 050 21001	100Ω 1% 0,6W
R 15	4822 050 21001	100Ω 1% 0,6W
R 16	4822 050 21002	1k 1% 0,6W
R 17	4822 050 21001	100Ω 1% 0,6W
R 18	4822 050 21001	100Ω 1% 0,6W
R 20	4822 050 11502	1k5 1% 0,6W
R 21	4822 050 21001	100Ω 1% 0,6W
R 22	4822 050 21002	1k 1% 0,6W
R 24	4822 050 25603	56k 1% 0,6W
R 25	4822 050 22201	220Ω 1% 0,6W
R 26	4822 050 26801	680Ω 1% 0,6W

R 27	4822 116 83594	R-PTC 0,75A 60V
R 28	4822 116 83594	R-PTC 0,75A 60V
R 29	4822 116 83593	R-PTC 1,6A 50V
R 30	4822 116 83593	R-PTC 1,6A 50V
R 31	4822 050 24702	4k7 1% 0,6W
R 32	4822 050 25605	5M6 1% 0,6W
R 33	4822 050 24703	47k 1% 0,6W
R 34	4822 050 11004	100k 1% 0,6W
R 35	4822 050 24302	4k3 1% 0,6W
R 36	4822 050 21503	15k 1% 0,6W
R 37	4822 050 21003	10k 1% 0,6W
R 38	4822 050 23902	3k9 1% 0,6W
R 40	5322 116 90018	0Ω
R 41	4822 050 21003	10k 1% 0,6W
R 42	4822 050 21504	150k 1% 0,6W

R 43	4822 050 21003	10k 1% 0,6W
R 44	4822 050 22203	22k 1% 0,6W
R 45	4822 050 24703	47k 1% 0,6W
R 46	4822 050 22203	22k 1% 0,6W
R 47	4822 050 22202	2k2 1% 0,6W
R 48	4822 050 22203	22k 1% 0,6W
R 64	4822 050 24704	470k 1% 0,6W
R 65	4822 050 22203	22k 1% 0,6W
R 66	4822 050 22403	24k 1% 0,6W
R 67	4822 050 21212	1k2 1% 0,6W

S 11	5322 209 81236	LM337KC

BS DAC PANEL

CD09	4822 126 12049	47nF 63V
CD10	4822 124 40433	47µF 20% 25V
CD11	4822 126 12049	47nF 63V
CD12	4822 126 12049	47nF 63V
CD13	4822 124 40433	47µF 20% 25V
CD14	4822 124 40433	47µF 20% 25V
CD15	4822 126 12049	47nF 63V
CD16	4822 126 12049	47nF 63V
CD17	4822 124 40433	47µF 20% 25V
CD18	4822 124 40433	47µF 20% 25V
CD19	4822 126 12049	47nF 63V
CD20	4822 126 12049	47nF 63V
CD21	4822 124 40433	47µF 20% 25V
CD22	4822 124 40433	47µF 20% 25V
CD23	4822 126 12049	47nF 63V
CD24	4822 126 12049	47nF 63V
CD25	4822 124 40433	47µF 20% 25V
CD26	4822 124 40433	47µF 20% 25V
CD31	4822 126 12042	39pF 2% 63V
CD32	4822 126 12042	39pF 2% 63V
CD33	5322 121 50999	470pF 1% 400V
CD34	5322 121 50999	470pF 1% 400V
CD35	4822 126 12042	39pF 2% 63V
CD36	4822 126 12042	39pF 2% 63V
CD37	5322 121 50999	470pF 1% 400V
CD38	5322 121 50999	470pF 1% 400V
C512	4822 124 40244	2,2µF 20% 63V
C523	4822 124 40433	47µF 20% 25V
C524	4822 126 12049	47nF 63V
C601	4822 121 51288	100pF 2% 630V
C602	4822 121 51288	100pF 2% 630V
C603	4822 121 51288	100pF 2% 630V
C604	4822 121 51288	100pF 2% 630V
C605	4822 121 43066	1nF 1% 400V
C606	4822 121 43066	1nF 1% 400V
C607	4822 121 51288	100pF 2% 630V
C608	4822 121 51288	100pF 2% 630V
C609	5322 122 31626	100pF 2% 500V
C610	5322 122 31626	100pF 2% 500V
C681	4822 124 41643	100µF 20% 16V
C682	4822 124 41643	100µF 20% 16V
C683	4822 124 41643	100µF 20% 16V
C684	4822 124 41643	100µF 20% 16V

QD01	4822 701 11933	SAA7350GP
Q511	4822 209 30264	SM5840FP
Q512	4822 209 30985	PST523C
Q601	5322 209 86234	NE5532N
Q602	5322 209 50602	NE5532N

RD09	4822 052 10478	4Ω7 5% 0,33W
RD10	4822 052 10478	4Ω7 5% 0,33W
RD11	4822 052 10478	4Ω7 5% 0,33W
RD12	4822 116 52261	24k 5% 0,5W
RD15	4822 050 21001	100Ω 1% 0,6W
RD16	4822 050 21001	100Ω 1% 0,6W
RD31	4822 050 24703	47k 1% 0,6W
RD32	4822 050 24703	47k 1% 0,6W
RD33	4822 050 24703	47k 1% 0,6W
RD34	4822 050 24703	47k 1% 0,6W
R512	4822 116 52234	100k 5% 0,5W
R513	4822 052 10478	4Ω7 5% 0,33W
R601	4822 050 28202	8k2 1% 0,6W
R602	4822 050 28202	8k2 1% 0,6W
R603	4822 050 28202	8k2 1% 0,6W
R604	4822 050 28202	8k2 1% 0,6W
R605	4822 050 29102	9k1 1% 0,6W
R606	4822 050 29102	9k1 1% 0,6W
R607	4822 050 29102	9k1 1% 0,6W
R608	4822 050 29102	9k1 1% 0,6W
R609	4822 050 25602	5k6 1% 0,6W
R610	4822 050 25602	5k6 1% 0,6W
R611	4822 050 27502	7k5 1% 0,6W
R612	4822 050 27502	7k5 1% 0,6W
R613	4822 050 25602	5k6 1% 0,6W
R614	4822 050 25602	5k6 1% 0,6W
R615	4822 116 52175	100Ω 5% 0,5W
R616	4822 116 52175	100Ω 5% 0,5W
R681	4822 052 10479	47Ω 5% 0,33W
R682	4822 052 10479	47Ω 5% 0,33W
R683	4822 052 10479	47Ω 5% 0,33W
R684	4822 052 10479	47Ω 5% 0,33W